#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.02.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 968

Injection pump

Pump designation : PE6P12OA32ORS7248 EP type number : 0 412 626 900

Governor

Governer design. : RQV275...1150PA986

: 0 421 813 920 Governer no.

Cust. part No. : 1248033/6

Customer-spec. information Customer : DAF : RS 222 L Mator Power KW : 222.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 130 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter: 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.25 : **←** 0.05 Tolerance mm Check

: **←** 0.10 tolerance mm

Rack travel in mm : 12.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : + 0.30

Check

: +- 0.50 tolerance \*NW

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 12.25

: + 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 187.0

Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 2.52
	+ Tolerance mm : + 0.25
Check tolerance	
cm3/1000s. : +- 4.0	Rated speed rpm : 450
CM3/10003. ; +- 4.0	The state of the s
	+ guide sleeve
Spreed	+ travel mm : 3.07
	+ Tolerance mm : + 0.25
Tolerance	+
cm3/1000 strokes : 5.0	+ Rated speed rpm : 1500
	+ guide sleeve
Check tolerance	+ travel mm : 11.50
cm3/1000s. : 9.0	+ Tolerance mm : + 0.50
UND/10003 /.0	T roter differ min
	T
	CUITA DI SEUE DOCTETONI
	+ GUIDE SLEEVE POSITION
Rated speed rpm : 275	†
	+
Rack travel in mm : 4.70	+ control lever
Tolerance mm : + 0.10	→ position degree : -1
Del. quantity	+ Rated speed rpm : 1325
cm3/1000 strokes : 16.0	
	Rack travel in mm: 11.20
Tolerance	
cm3/1000 strokes : +- 3.0	† Tolerance mm : + 1.30
Check tolerance	†
$cm3/1000s.$ : $\leftarrow$ 6.0	+
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	1
cm3/1000 strokes : 8.0	Rated speed rpm : 1000
Check tolerance	- Aneroid pressure
	hPa : -
cm3/1000s. : 12.0	
	+ Del. quantity
	+ cm3/1000 strokes : 187.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : +- 1.0
	+ Check tolerance
	+ cm3/1000s. : + 4.0
GUIDE SLEEVE TRAVEL	Spreed
GOIDE SEELAE INNAEL	+ Tolerance
Debed speed mp. 4 1207	cm3/1000 strokes : 5.0
Rated speed rpm : 1207	
guide sleeve	+ Check tolerance
travel mm : 8.25	- cm3/1000s. : 9.0
Tolerance mm : + 0.25	+
	+
Rated speed rpm : 275	+
guide sleeve	+ CONTROL LEVER
travel mm : 1.45	
Tolerance mm : +- 0.15	- control lever
roterance man . Total	position degree : 119.0
000	Laction and a
Rated speed rpm : 800	tolerance degree : + 4.0
guide sleeve	†
travel mm : 5.21	+ RATED SPEED
Tolerance mm : + 0.25	+ rack travel mm : 11.25
	Rated speed rpm : 1207
Rated speed rpm : 315	+ Tolerance 1/min : + 5
THE PERSON NAMED IN THE PE	1 TOCCIONICE ITHIN
guide sleeve	T mak +mayal / 00
travel mm : 1.98	+ rack travel mm : 4.00
Tolerance mm : +- 0.25	Rated speed rpm : 1320
	+ Tolerance 1/min : + 15
Rated speed rpm : 385	+
	•

rack travel mm : 0.70 Tolerance mm : +- 0.70 Rated speed rpm : 1450

## LOW IDLE

control lever position degree : 83.0 tolerance degree : +- 4.0

## Testing:

Rated speed rpm : 275
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 175

CRT mm min. : > 6.70

Rated speed rpm : 340

#### TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 1150 rack travel mm : 12.25 Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 12.25
Tolerance mm : + 0.05

Pressure hPa : Rated speed rpm : 600
rack travel mm : 9.30
Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 420 rack travel mm : 11.65

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Tolerance mm : + 0.05

Pressure hPa : 240 rack travel mm : 10.40 Tolerance mm : +- 0.10

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 600
Del. quantity

cm3/1000 strokes : 122.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

## LOW IDLE

Rated speed rpm : 275

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.02.97 Test oil : ISO 4113

Combination No. : 0 402 646 969

Injection pump

Pump designation : PE6P120A320RS7248

: 7

EP type number : 0 412 626 901

Governor

Governer design. : RQV275...1150PA986

Governer no. : 0 421 813 920

Cust. part No. : 1248041/4

Customer—spec. information

Customer : DAF Motor : RS 200 L

Power KW : 200.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 130 Tolerance L/h : ← 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.50

Tolerance mm : ← 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.35
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 167.0

Tolerance		+ Spreed	
cm3/1000 strokes	: +- 1.0	+ Tolerance	
		+ cm3/1000 strokes	: 5.0
Check tolerance		+ Check tolerance	
cm3/1000s.	: +- 4.0	+ cm3/1000s.	: 9.0
CIID7 10005.	4.0	I (m3/10003.	. 7.0
Canad		<del></del> T	
Spreed		<u> </u>	
Tolerance		T CONTROL LEVER	
cm3/1000 strokes	: 5.0	I CONTROL LEVEN	
CHIDY TOOD STITCKES	. 5.0	T control lever	
Check tolerance		position degree	: 120.0
cm3/1000s.	: 9.0	tolerance degree	
CMS/ 18005.	. 9.0	T toterance degree	: +- 4.0
		I RATED SPEED	
			: 10.35
Data dansa dansa	. 375	+ rack travel mm	
Rated speed rpm	: 275	+ Rated speed rpm	
n.a	/ 70	+ Tolerance 1/min	: +- 5
Rack travel in mn		T	
Tolerance mm	: <b>←</b> 0.10	rack travel mm	: 4.00
Del. quantity	44.0	+ Rated speed rpm	
cm3/1000 strokes	: 16.0	† Tolerance 1/min	: +- 15
Tolerance		†	0.70
cm3/1000 strokes	: +- 3.0	+ rack travel mm	: 0.70
Check tolerance		+ Tolerance mm	: <b>←</b> 0.70
cm3/1000s.	: ← 6.0	+ Rated speed rpm	: 1450
Spreed		†	
Tolerance		†	
cm3/1000 strokes	: 8.0	†	
Check tolerance		+	
cm3/1000s.	: 12.0	+ LOW IDLE	
		+	
		‡	
(B) SETTING OF IN	NECTION PUMP	control lever	
(B) SETTING OF IN WITH GOVERNOR	NECTION PUMP	position degree	
	NECTION PUMP		
	NECTION PUMP	position degree tolerance degree	
WITH GOVERNOR		position degree	
		position degree tolerance degree  Testing:	: ← 4.0
WITH GOVERNOR		position degree tolerance degree  Testing:  Rated speed rpm	: ← 4.0 : 275
WITH GOVERNOR		position degree tolerance degree  Testing:  Rated speed rpm	: ← 4.0 : 275
GUIDE SLEEVE POSI	TION	position degree tolerance degree  Testing:	: ← 4.0 : 275
GUIDE SLEEVE POSI control lever position degree	: - 1	position degree tolerance degree  Testing: Rated speed rpm rack travel mm Tolerance mm	: + 4.0 : 275 : 4.70 : + 0.10
GUIDE SLEEVE POSI	: - 1	position degree tolerance degree  Testing:  Rated speed rpm	: + 4.0 : 275 : 4.70 : + 0.10
GUIDE SLEEVE POSI control lever position degree Rated speed rpm	: - 1 : 1335	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm	: + 4.0 : 275 : 4.70 : + 0.10 : 175
GUIDE SLEEVE POSI control lever position degree	: - 1 : 1335	position degree tolerance degree  Testing: Rated speed rpm rack travel mm Tolerance mm	: + 4.0 : 275 : 4.70 : + 0.10 : 175
GUIDE SLEEVE POSI control lever position degree Rated speed rpm	: - 1 : 1335 : 10.30	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm	: - 1 : 1335 : 10.30	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm	: - 1 : 1335 : 10.30 : + 1.30	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm	: - 1 : 1335 : 10.30	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.  Rated speed rpm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.  Rated speed rpm  TORQUE CONTROL	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000	position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm TORQUE CONTROL Rated speed rpm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340 : 1000
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  FULL LOAD DELIVER Rated speed rpm	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000	position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm TORQUE CONTROL Rated speed rpm rack travel mm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340  : 1000 : 11.35
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000 : 1000	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.  Rated speed rpm  TORQUE CONTROL	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340  : 1000 : 11.35
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000 : 1000	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.  Rated speed rpm  TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340  : 1000 : 11.35 : + 0.05
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000 : 1000	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.  Rated speed rpm  TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340  : 1000 : 11.35 : + 0.05
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000 : 1000 : 167.0	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.  Rated speed rpm  TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340  : 1000 : 11.35 : + 0.05
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000 : 167.0 : + 1.0	position degree tolerance degree  Testing:  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm  CRT mm min.  Rated speed rpm  TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340  : 1000 : 11.35 : + 0.05
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: - 1 : 1335 : 10.30 : + 1.30 Y AT FULL LOAD STOP : 1000 : 167.0 : + 1.0	position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm TORQUE CONTROL Rated speed rpm rack travel mm	: + 4.0  : 275 : 4.70 : + 0.10 : 175 : > 7.50 : 340  : 1000 : 11.35 : + 0.05

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.70
Tolerance mm : +- 0.05

Pressure hPa : Rated speed rpm : 600
rack travel mm : 9.10
Tolerance mm : +- 0.15

#### **MEASUREMENT**

Rated speed rpm : 600

Pressure hPa : 340 rack travel mm : 10.75 Tolerance mm : + 0.05

Pressure hPa : 200
rack travel mm : 9.70
Tolerance mm : + 0.10

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 117.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

LOW IDLE

Rated speed rpm : 275

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

End of test specification sheet

AD6

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.01.97 Edition Test oil : ISO 4113

Combination No. : 0 402 646 970

Injection pump

Pump designation : PE6P120A320RS7248

EP type number : 0 412 626 902

Governor

Governer design. : RQV275...1150PA986

Governer no. : 0 421 813 920

Cust. part No. : 1248046/4

Customer-spec. information Customer : DAF

: RS 180 L Motor : 180.0

Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : **←** 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 130 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar : + 1.5 Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : x length mm :

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 20.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing Tolerance : 0-60-120-180-240

: +- 0.30

Check

tolerance \*NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 10.75 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 147.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance		1
cm3/1000s.	: + 4.0	Rated speed rpm : 450
(110) 10000.	4.0	+ guide sleeve
Spreed		+ travel mm : 3.07
		† Tolerance mm : +- 0.25
Tolerance	5.0	1500
cm3/1000 strokes	: 5.0	+ Rated speed rpm : 1500 + guide sleeve
Check tolerance		travel mm : 11.50
cm3/1000s.	: 9.0	+ Tolerance mm : + 0.50
		+
Dated aread are	: 275	GUIDE SLEEVE POSITION
Rated speed rpm	: 213	Ī
Rack travel in m	m: 4.70	control lever
Tolerance mm	: <b>←</b> 0.10	+ position degree : - 1
Del. quantity	44.0	Rated speed rpm : 1340
cm3/1000 strokes Tolerance	: 16.0	+ Rack travel in mm : 9.70
cm3/1000 strokes	: + 3.0	+ Tolerance mm : +- 1.30
Check tolerance	3.0	+
cm3/1000s.	: +- 6.0	
Spreed		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: 8.0	+ Rated speed rpm : 1000
Check tolerance	: 0.0	+ Rated speed rpm : 1000 + Aneroid pressure
cm3/1000s.	: 12.0	+ hPa : 1000
		+ Del. quantity
		+ cm3/1000 strokes : 147.5
(B) SETTING OF IN	NJECTION PUMP	+ Tolerance + cm3/1000 strokes : + 1.0
WITH GOVERNOR		Check tolerance
		+  cm3/1000s. : + 4.0
GUIDE SLEEVE TRAN	/EL	+ Spreed
	4207	† Tolerance
Rated speed rpm	: 1206	+ cm3/1000 strokes : 5.0 + Check tolerance
guide sleeve travel mm	: 8.25	- cm3/1000s. : 9.0
Tolerance mm	: +- 0.20	+
		+
Rated speed rpm	: 275	CONTROL LEUED
guide sleeve travel mm	: 1.44	+ CONTROL LEVER
Tolerance mm	: + 0.15	T control lever
		position degree : 120.0
Rated speed rpm	: 799	tolerance degree : +- 4.0
guide sleeve	5 34	TATEL OPERA
travel mm Tolerance mm	: 5.21 : +- 0.25	+ RATED SPEED + rack travel mm : 9.75
roterance inii	. +- 0.23	Rated speed rpm : 1182
Rated speed rpm	: 315	+ Tolerance 1/min : + 5
guide sleeve		+
travel mm	: 1.98	+ rack travel mm : 4.00
Tolerance mm	: ← 0.25	+ Rated speed rpm : 1280 + Tolerance 1/min : + 15
Rated speed rpm	: 365	T TOCETATION . T- 13
guide sleeve		rack travel mm : 0.70
travel mm	: 2.52	+ Tolerance mm : + 0.70
Tolerance mm	: <del></del> 0.25	+ Rated speed rpm : 1450

## LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 175

CRT mm min. : > 7.40

Rated speed rpm : 340

## TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 10.75 Tolerance mm : + 0.05

Rated speed rpm : 1150 rack travel mm : 10.75 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : + 0.05

Pressure hPa : Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : + 0.10

## **MEASUREMENT**

Rated speed rpm : 600

Pressure hPa : 260 rack travel mm : 10.35 Tolerance mm : + 0.05

Pressure hPa : 190

rack travel mm : 9.90 Tolerance mm : + 0.10

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 600
Del. quantity

cm3/1000 strokes : 121.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 4.0

## LOW IDLE

Rated speed rpm : 275

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.02.97 Test oil : ISO 4113

Combination No. : 0 402 648 781

Injection pump

Pump designation : PE8P120A320LS7906 EP type number : 0 412 628 921

Governor

Governer design. : RQV300...1050PA1330K

Governer no. : 0 421 815 547

Cust. part No. : 0422 3946 KY

Customer-spec. information Customer : KHD

Motor : BF8M1015/C Power KW : 400.0

rower kw . 400.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 210 Tolerance l/h : ← 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : +- 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 8-7-2-6-5

: - 3- 1

Phasing : 0-45-90-135-180

: -270-315

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

\*NW after s.o.d. : 315.00

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

. 1000

	+
Rack travel in mm: 14.20	Rated speed rpm : 510
Tolerance mm : + 0.05	+ guide sleeve
Dol gupntitu	+ travel mm : 4.02 + Tolerance mm : +- 0.25
Del. quantity cm3/1000 strokes : 360.0	Toterance inii : += 0.25
011D7 7000 017 01000 1 00010	Rated speed rpm : 1340
Tolerance	+ guide sleeve
cm3/1000 strokes : + 1.0	+ travel mm : 13.50
Check tolerance	Tolerance mm : +- 0.50
cm3/1000s. : +- 4.0	
(III) (1000),	GUIDE SLEEVE POSITION
Spreed	+
- 1	<b>+</b>
Tolerance cm3/1000 strokes : 6.0	control lever
cms/ ludu strokes : 6.0	<pre>position degree : - 1 Rated speed rpm : 1165</pre>
Check tolerance	Traced opeca (pill) . 1705
cm3/1000s. : 9.0	Rack travel in mm: 13.20
	+ Tolerance mm : + 2.70
	†
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP
Nated Speed (pill : 505	TOLE COAD DECIVERY AT LOCE COAD OTO
Rack travel in mm : 5.00	Rated speed rpm : 1050
Tolerance mm : + 0.10	+ Aneroid pressure
Del. quantity	+ hPa : 1600
cm3/1000 strokes : 23.0 Tolerance	+ Del. quantity + cm3/1000 strokes : 360.0
cm3/1000 strokes : +- 3.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
$cm3/1000s$ . : $\leftarrow$ 6.0	Check tolerance
Spreed	+  cm3/1000s. : + 4.0
Tolerance cm3/1000 strokes : 8.0	+ Spreed + Tolerance
cm3/1000 strokes : 8.0 Check tolerance	- roterance - cm3/1000 strokes : 6.0
cm3/1000s. : 12.0	Check tolerance
	+ cm3/1000s. : 9.0
	+
(B) SETTING OF INJECTION PUMP	†
WITH GOVERNOR	CONTROL LEVER
	- CONTINUE ELVEIN
GUIDE SLEEVE TRAVEL	+ control lever
	+ position degree : 122.0
Rated speed rpm : 1092	tolerance degree : +- 4.0
guide sleeve travel mm : 10.01	T RATED SPEED
Tolerance mm : + 0.15	+ rack travel mm : 13.20
	Rated speed rpm : 1080
Rated speed rpm : 300	Tolerance 1/min : +- 5
guide sleeve	t most traval and 1 / 00
travel mm : 1.60 Tolerance mm : + 0.20	+ rack travel mm : 4.00 + Rated speed rpm : 1200
roterance min	+ Tolerance 1/min : +- 15
Rated speed rpm : 794	+
guide sleeve	rack travel mm : 0.50
travel mm : 6.85	+ Tolerance mm : + 0.50
Tolerance mm : + 0.25	+ Rated speed rpm : 1350

## LOW IDLE

control lever position degree : 72.0 tolerance degree : +- 4.0

### Testing:

Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : > 6.30

Rated speed rpm : 350

#### TORQUE CONTROL

Rated speed rpm : 1050 rack travel mm : 14.20 Tolerance mm : + 0.05

Rated speed rpm : 800 rack travel mm : 13.50 Tolerance mm : + 0.25

Rated speed rpm : 600 rack travel mm : 12.30 Tolerance mm : + 0.25

Rated speed rpm : 450 rack travel mm : 11.05 Tolerance mm : +- 0.25

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1050
Pressure hPa : 1600
rack travel mm : 14.20
Tolerance mm : + 0.05

Pressure hPa : Rated speed rpm : 1050
rack travel mm : 8.70
Tolerance mm : +- 0.20

#### **MEASUREMENT**

Rated speed rpm : 1050

Pressure hPa : 500 rack travel mm : 11.45 Tolerance mm : + 0.20

Pressure hPa : 800 rack travel mm : 13.60 Tolerance mm : + 0.05

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 240.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : + 0.30
Del. quantity
cm3/1000 strokes : 145.0
Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 24.0

## LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : + 3.0

Check tolerance cm3/1000s. : +- 6.0

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.01.97 Edition Test oil : ISO 4113

Combination No. : 0 402 676 832

Injection pump

Pump designation : PE6P120A320LS7898 EP type number : 0 412 626 957

Governor

Governer design. : RSV350...1000PDA648

Governer no. : 0 421 833 565

Cust. part No. : 0270748202

Customer-spec. information Customer : MB-NFZ : OM441 A Motor Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 120 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance \*NW : + 0.50

Start of delivery mark

Tolerance : +- 0.10

Check

: **←** 0.75 tolerance \*NW

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm: 11.75

Tolerance mm :  $\leftarrow$  0.05

1	Aneroid pressure
Del. quantity	hPa : 1000
cm3/1000 strokes : 172.0	Del. quantity
Tolerance	cm3/1000 strokes : 172.0 Tolerance
cm3/1000 strokes : + 1.0	cm3/1000 strokes : +- 1.0
	Check tolerance
Check tolerance	cm3/1000s. : +- 4.0
cm3/1000s. : +- 4.0	Spreed Tolerance
Spreed	cm3/1000 strokes : 5.0
+	Check tolerance
Tolerance + cm3/1000 strokes : 5.0 +	cm3/1000s. : 9.0
Clims/ roud strokes : 3.0	
Check tolerance	
cm3/1000s. : 9.0	CONTRUL LEVER
	control lever
+	position degree : 93.0
Rated speed rpm : 350	tolerance degree : +- 4.0
Rack travel in mm: 5.00	
Tolerance mm : → 0.10	ASSEMBLY GOVERNOR SETTING
Del. quantity +	
cm3/1000 strokes : 19.0	Rated speed rpm : 1030 rack travel mm : 10.70
Tolerance + 3.0 +	rack travet mm : 10.70
Check tolerance +	Rated speed rpm : 1080
cm3/1000s. : +- 6.0 +	Tolerance 1/min : +- 4
Spreed + Tolerance +	rack travel mm : 4.00
cm3/1000 strokes : 6.0	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 10.0	Rated speed rpm : 1300
Į	
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1031
WITH GOVERNOR	rack travel mm : 10.70
I	Rated speed rpm : 1081
	Tolerance 1/min : + 4
GUIDE SLEEVE POSITION	rack travel mm : 4.00
İ	rack travel mm : 0.85
control lever	Tolerance mm : +- 0.55
position degree : -3	Rated speed rpm : 1300
Rated speed rpm : 800	
Rack travel in mm: 0.50	Rated speed rpm : 1032
Tolerance mm : + 0.20	rack travel mm : 10.70
+	Rated speed rpm : 1082
governor spring + + + + + + + + + + + + + + + + + + +	Rated speed rpm : 1082 Tolerance 1/min : +- 4
click setting x : 4.50	rack travel mm : 4.00
+	nock though me
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85 Tolerance mm : +- 0.55
TOLL LOAD DELIVERY AT TOLL LOAD OTOT	Rated speed rpm : 1300
Rated speed rpm : 980	

Rated speed rpm : 1	1033 +	rack travel mm	: 2.00
	0.70		
	+	TORQUE CONTROL	
Rated speed rpm : 1 Tolerance 1/min : +-	1083	Rated speed rpm	: 980
	4.00	rack travel mm	: 11.75
TACK CTAVEC HAIT	1.00	Tolerance mm	: + 0.05
rack travel mm :	0.85		
Tolerance mm : +-		Rated speed rpm	: 600
Rated speed rpm : 1	300 +	rack travel mm Tolerance mm	: 11.75
	<u> </u>	loterance mm	: +- 0.05
Rated speed rpm : 1	034	Rated speed rpm	: 400
	0.70	rack travel mm	
	. +	Tolerance mm	
	084		
Tolerance 1/min : +		ANGE A	
rack travel mm :	4.00 †	ANEROID/ALTITUDE COMPENSATOR TEST	
rack travel mm :	0.85	COMPENSATOR 1EST	
Tolerance mm : +-			
	300 +	SETTING	
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	+		
	t	Rated speed rpm	
	035 +	Pressure hPa	
rack travel mm : 1	0.70	rack travel mm	
Pated aread arm	085	Tolerance mm	: +- 0.05
	<u> </u>	Pressure hPa	: -
	4.00	Rated speed rpm	
radic braves inti	1	rack travel mm	
rack travel mm :	0.85	Tolerance mm	
Tolerance mm : +-			
Rated speed rpm : 1	300 +	MEASUREMENT	
		Rated speed rpm	: 400
LOW IDLE	I	waren sheen thu	. 400
	1	Pressure hPa	: 300
	+	rack travel mm	
control lever	+	Tolerance mm	: <b>←</b> 0.15
	73.0 +		/00
tolerance degree : +-	4.0	Pressure hPa	: 400
Testing:	Ť	rack travel mm Tolerance mm	: 11.40 : + 0.15
resting:	I	roterance iikii	. +- 0.15
Rated speed rpm : 3	50	Start interlock	
	5.00		
Tolerance mm : +-	0.10 +		
	3 00 +	EUCL DELTUEDY CUA	DACTEDISTICS
	2.00 05 +	FUEL DELIVERY CHA	KWC1EKT91TC9
Rated speed rpm : 44 Tolerance 1/min : +-	30	Aneroid pressure	
TOTAL CHARGE TANKET	1	hPa	: 1000
Rated speed rpm : 10	00 1	Rated speed rpm	: 600
	+	Del. quantity	
CRT mm min. : > 19	9.50 +	cm3/1000 strokes	: 170.0
	+	Tolerance	
SET IDLE AUXILIARY SPRING	<b>f</b>	cm3/1000 strokes	: +- 3.0
	<del></del>		

Check tolerance cm3/1000s.	: <b>←</b> 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure	: 350
Rated speed rpm Del. quantity	: 400
cm3/1000 strokes Tolerance	: 131.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s.	: + 4.0
Spreed Tolerance	
cm3/1000 strokes	: 8.0
Aneroid pressure hPa	•
Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 136.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Del. quantity	•
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	: + 10.0
cm3/1000s.	: <b>←</b> 14.0
LOW IDLE	
	. 750
Rated speed rpm Del. quantity	: 350
cm3/1000 strokes Tolerance	: 19.0
cm3/1000 strokes Check tolerance	: <b>←</b> 3.0
cm3/1000s.	: <del></del> 6.0

Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000s. : 10.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.01.97 Test oil : ISO 4113

Combination No. : 0 402 678 831

## Injection pump

Pump designation : PE8P12OA32OLS7901 EP type number : 0 412 628 918

## Governor

Governer design. : RSV350...1050P0A651

Governer no. : 0 412 833 568

Cust. part No. : 0270745602

## Customer—spec. information Customer : MB—NFZ Motor : CM442LA Power KW : 297.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

tolerance mm

Rack travel in mm : 20.50

Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 4- 1

: +- 0.10

Phasing : 0-45-90-135-180

: −270−315 : ← 0.30

Check

Tolerance

tolerance "NW : +- 0.50

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm: 13.40

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 210.0

\_ .

Tolerance

cm3/1000 strokes : +- 1.5

t.	- 1
Check tolerance	Tolerance cm3/1000 strokes : 5.0 Check tolerance
	cm3/1000s. : 9.0
Spreed	
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	control lever position degree : 90.0 tolerance degree : + 4.0
Rated speed rpm : 350	RATED SPEED rack travel mm : 12.80 Rated speed rpm : 1075
Rack travel in mm : 5.50 + Tolerance mm : + 0.10 +	Tolerance 1/min : + 5
Del. quantity cm3/1000 strokes : 19.0 Tolerance	rack travel mm : 4.00 Rated speed rpm : 1150 Tolerance 1/min : +- 5
cm3/1000 strokes : + 3.0 + Check tolerance + 6.0 +	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000s. : +- 6.0 + 5preed + Tolerance +-	Tolerance mm : + 0.55 Rated speed rpm : 1400
cm3/1000 strokes : 8.0 + Check tolerance	
cm3/1000s. : 12.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 70.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Testing:
control lever position degree : - 3 Rated speed rpm : 800	Rated speed rpm : 350 rack travel mm : 5.50 Tolerance mm : +- 0.10
Rack travel in mm : 0.50 Tolerance mm : + 0.20	rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : +- 30
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 100
Rated speed rpm : 1030	CRT mm min. : > 19.50
Aneroid pressure hPa : 1200	SET IDLE AUXILIARY SPRING
Del. quantity cm3/1000 strokes : 210.0	rack travel mm : 2.00
Tolerance cm3/1000 strokes : +- 1.5 Check tolerance	TORQUE CONTROL
cm3/1000s. : +- 4.5 Spreed	Rated speed rpm : 1030 rack travel mm : 13.40 Tolerance mm : +- 0.05

Rated speed rpm rack travel mm Tolerance mm	: 600 : 13.70 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Pressure hPa Rated speed rpm	: - : 500
MEASUREMENT	
Pressure hPa rack travel mm Tolerance mm	: 500 : 2.30 : +- 0.15
Pressure hPa rack travel mm Tolerance mm	: 250 : 0.35 : ← 0.05
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1200 : 600
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1200 : 600
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1200 : 600
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1200 : 600 : 221.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1200 : 600 : 221.0 : + 1.5
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1200 : 600 : 221.0 : ← 1.5 : ← 4.5
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa	: 1200 : 600 : 221.0 : ← 1.5 : ← 4.5 : 8.0 : 12.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 600 : 221.0 : ← 1.5 : ← 4.5 : 8.0 : 12.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1200 : 600 : 221.0 : + 1.5 : + 4.5 : 8.0 : 12.0 : 500 : 143.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1200 : 600 : 221.0 : ← 1.5 : ← 4.5 : 8.0 : 12.0

Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 240.0 : + 15.0 : + 19.0
LOW IDLE	
Rated speed rpm Del. quantity	: 350
cm3/1000 strokes Tolerance	: 19.0
cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0

STARTING FUEL DELIVERY

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 05,02,97 Edition : ISO 4113 Test oil

Combination No. : 0 402 690 801

Injection pump

Pump designation : PE12P120A520LS7907

EP type number : 0 412 620 849

Governor

Governer design. : RE30

: 0 421 890 041 Governer no.

Cust. part No. : 0260745202

Customer-spec. information

Customer : MTU

: 12V183TE52K Motor

Power KW : 846.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1/3.2

Test oil inlet

40 temp. °C Tolerance °C 2.0

: 2 417 413 077 Overflow valve

2.0 Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : <del>+-</del> 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 1000

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.05 : + 0.05Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 : **←** 0.50 Tolerance mm

: 12- 1- 5- 9- 8 Firing order

: - 4- 11- 10- 2 : - 7

: 0-45-60-105-120 Phasing

: -180-225-240-285

: -345

Tolerance : + 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Tolerance : + 0.10

Check

tolerance \*NW : **←** 0.75

Barrel no. : 12

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 VTESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: Setting point (P, R and H pump) 3.100 Uact V CRT mm 13.00 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10 Check value (P, R and H pump) 1,700 Uact V 6.15 CRT mm : +/- 0.25 Tolerance mm Check tolerance mm : +/- 0.30Setting point (amua M) 3.100 Uact V CRT mm 12.50 : +/- 0.05 Tolerance mm Check : +/- 0.10 tolerance mm Check value (M pump) Uact V 1.700 5.50 CRT mm Tolerance mm : +/- 0.25 Check : +/~ 0.30 tolerance mm Stop position : Value with Uact V deenergised adjusting magnet and control rod in stop position. 0.75 CRT mm Tolerance mm : +/- 0.25 Check

: +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60
Amplitude V: 1.4
Tolerance V: +/- 0.6
Check

tolerance V : +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

1200 Rated speed rpm 3.100 Uact V Del. quantity cm3/1000 strokes : 313.0 Tolerance cm3/1000 strokes 1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

## FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Uact V : 3.100
Del. quantity
cm3/1000 strokes : 353.0
Tolerance
cm3/1000 strokes : + 4.0
Check tolerance
cm3/1000s. : + 8.0

## TEST POINT L1

Rated speed rpm : 300
Uact V : 1.350
Tolerance Volt : + 0.060
Check tolerance
Volt : + 0.060
Del. quantity
cm3/1000 strokes : 19.0

tolerance mm

Tolerance cm3/1000 strokes : +- 3.0

Spreed Tolerance

8.0 cm3/1000 strokes :

Check tolerance

cm3/1000s. 12.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 3.600 Uact V

Del. quantity cm3/1000 strokes : 445.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance cm3/1000s. : + 24.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 31,01,97 Edition Test oil : ISO 4113

Combination No. : 0 402 899 300

Injection pump

Pump designation : PE10P120A520LS8519

: 0 412 829 201 EP type number

Governor

Governer design. : RE30

: D 421 890 036 Governer no.

Cust. part No. : 51.11103-7560

Customer-spec, information

: MAN Customer

: D 2840 LF 20 Motor

: 441.0 Power KW

## TEST BENCH REQUIREMENTS

: 3.1 Inlet line

Test oil inlet

40 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 073

3.0 Inlet press. bar : 0.1 : +-Tolerance bar

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar 1.5 Tolerance bar

: 1 680 750 089 Test Lines

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 600

## **REMARKS**

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery

## BEGINNING OF DELIVERY

under Section C.

Test pressure bar : 26.0 Tolerance bar : +-

Prestroke mm 5.95 Tolerance mm : +- 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm: 13.00 Tolerance mm : + 0.50

Firing order : 10-9-4- 1-8

: - 6- 3- 5- 2

Phasing : 0-45-72-117-144 : -216-261-288-333

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

Start of delivery blocking

: + 0.10 Tolerance

Check

tolerance \*NW : +- 0.75

Barrel no. : 10

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RAPOSITION	ACK TRAVEL SENSOR
Engine speed min-1:	0
Setting point (P, R and H pump)	
Tolerance mm : Check	3.100 13.00 +/- 0.05 +/- 0.10
(P) R and h pumps	
Check	1.700 6.15 +/- 0.25 +/- 0.30
Setting point (M pump)	
Check	
Check value (M pump)	
Check	1.700 5.50 +/- 0.25 +/- 0.30
Stop position	
	Value with sed adjusting magnet and control rod in
Check	stop position. 0.75 +/- 0.25 +/- 0.35
ENGINE-SPEED SENSOR (All P and R pumps n	oct

Test with control rod in stop position

Engine speed min-1: 60 Amolitude V 1.4 Tolerance V : +/- 0.6 Check : +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

tolerance V

Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 950 Uact V 3.100 Del. quantity cm3/1000 strokes : 270.0 Tolerance

cm3/1000 strokes : +- 1.0 Check tolerance

cm3/1000s.: +-4.0 Spreed

Tolerance

cm3/1000 strokes : 8.0 Check tolerance

cm3/1000s. 12.0

#### FUEL DELIVERY CHARACTERISTICS

750 Rated speed rpm Uact V 1.480 Del. quantity cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes :  $\leftarrow$  5.0 Check tolerance : +cm3/1000s. 9.0 Spreed

Check tolerance

cm3/1000s. 12.0

Rated speed rom 750 Uact V 3.100 Del. quantity cm3/1000 strokes : 291.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : +-6.0

TEST POINT L1

300 Rated speed rpm :

H and M pumps)

Uact V Tolerance Volt	: 1.540 : + 0.060
Check tolerance Volt Del. quantity	: +- 0.080
cm3/1000 strokes	: 33.0
cm3/1000 strokes Spreed	: +- 3.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.440
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000s. : + 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30,01,97 Test oil : ISO 4113

Combination No. : 0 403 476 150

Injection pump

Pump designation : PES6MW100/720RS1131

: 0 413 406 165 EP type number

Governor

Governer design. : RSV350...1200MW0A404

Governer no. : 0 420 085 297

Cust. part No. : 0270742602

Customer-spec. information Customer : MB-NFZ : 0M366LA Motor Power KW : 171.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm 3.65 : +- 0.05 Tolerance mm Check

: + 1.50 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm: 14.45 Tolerance  $m_0$ :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 112.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

: +- 3.0 cm3/1000s.

Spreed

Tolerance cm3/1000 strokes : 3.5 Check tolerance	Check tolerance cm3/1000s. : 6.0
cm3/1000s. : 6.0	
	CONTROL LEVER
	t control lever
Rated speed rpm : 350	position degree : 103.0
•	tolerance degree : + 4.0
Rack travel in mm: 7.00	+
Tolerance mm : +- 0.10 - Del. quantity	RATED SPEED
cm3/1000 strokes : 12.0	rack travel mm : 1.00
Tolerance -	Tolerance mm : + 0.70
cm3/1000 strokes : + 2.0	Rated speed rpm : 1480
Check tolerance : +- 4.5	rack travel mm : 4.00
Spreed	Rated speed rpm : 1345
Tolerance	
cm3/1000 strokes : 3.5 - Check tolerance -	ASSEMBLY GOVERNOR SETTING
cm3/1000s. : 5.5	Rated speed rpm : 1230
•	rack travel mm : 13.45
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1314
WITH GOVERNOR -	Tolerance 1/min : +- 4
-	rack travel mm : 4.00
•	+
GUIDE SLEEVE POSITION	+ Rated speed rpm : 1231
GOIDE SEEEAE POSITION	rack travel mm : 13.45
-	1
control lever - position degree : - 3	Rated speed rpm : 1315 Tolerance 1/min : +- 4
position degree : - 3 - Rated speed rpm : 800 -	rack travel mm : 4.00
•	1
Rack travel in mm: 0.65	+ Rated speed rpm : 1232
Tolerance mm : + 0.35	Rated speed rpm : 1232 rack travel mm : 13.45
governor spring	}
pre-tension -	Rated speed rpm : 1316
click setting x : 5.00	Tolerance 1/min : + 4 rack travel mm : 4.00
	Tack travet min . 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	1000
Rated speed rpm : 1180	Rated speed rpm : 1233 rack travel mm : 13.45
Rated speed rpm : 1180 - Aneroid pressure	rack travet mm : 13.43
hPa : 1000	Rated speed rpm : 1317
Del. quantity	Tolerance 1/min : + 4
cm3/1000 strokes : 112.0 -	rack travel mm : 4.00
cm3/1000 strokes : + 1.0	
Check tolerance	Rated speed rpm : 1238
cm3/1000s. : + 3.0	rack travel mm : 13.45
Spreed - Tolerance -	Rated speed rpm : 1322
cm3/1000 strokes : 3.5	Tolerance 1/min : + 4
+	rack travel mm : 4.00

Rated speed rpm rack travel mm	: 1239 : 13.45
Rated speed rpm Tolerance 1/min rack travel mm	: 1323 : ← 4 : 4.00
LOW IDLE	
control lever position degree tolerance degree	: 76.0 : ← 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 7.00 : ← 0.10
rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1180 : 14.45 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 14.45 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 14.45 : + 0.05
Pressure hPa Rated speed rpm	: – : 500
rack travel mm Tolerance mm	: 500 : 10.90 : ÷- 0.10

Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 500 : 13.20 : + 0.10
Pressure hPa rack travel mm Tolerance mm	: 350 : 12.00 : + 0.10
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1000 : 750
Del. quantity cm3/1000 strokes	: 108.0
Tolerance cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000S. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 7.0
Aneroid pressure hPa Rated speed rpm Del. quantity	: - : 500
cm3/1000 strokes Tolerance	: 43.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s.	: ← 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes Tolerance	: 105.0
cm3/1000 strokes Check tolerance	: +- 5.0
cm3/1000s.	: +- 8.0
LOW IDLE	
Rated speed rpm	: 350

Del. quantity cm3/1000 strokes	:	12.0
Tolerance cm3/1000 strokes Check tolerance	; +-	2.0
cm3/1000s.	; <del>-</del>	4.5
Tolerance cm3/1000 strokes	:	3.5
Check tolerance cm3/1000s.	:	5.5

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07,02,97 Test oil : ISO 4113

Combination No. : 0 402 076 814

Injection pump

Pump designation : PES6P120B320RS3382

EP type number : 0 412 026 803

Governor

Governer design. : RSV425...1100P0A669

: 0 421 833 572 Governer no.

Cust. part No. : 836354708

Customer-spec. information : SISU Customer : 645 DSIE Motor : 200.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 0.1 Tolerance bar : +-

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar : +- 1.5 Toterance bar

: 1 680 750 008 Test lines

Outside diameter : 6.0 x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

3.65 Prestroke mm : + 0.05Tolerance mm

Check

: **←** 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  0.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

: +- 0.50 tolerance \*NW

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.20 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes :

206.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s. : +- 4.0	- Check tolerance - cm3/1000s. : 9.0
Spreed	
Tolerance	- CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	position degree : 96.0 tolerance degree : +- 4.0
Rated speed rpm : 425	RATED SPEED rack travel mm : 10.80 Rated speed rpm : 1145 Tolerance 1/min : +- 5
Rack travel in mm: 4.80	•
Tolerance mm : + 0.10	- rack travel mm : 4.00
Del. quantity	- Rated speed rpm : 1225
cm3/1000 strokes : 16.0 Tolerance	Tolerance 1/min : + 15
cm3/1000 strokes : +- 2.5	rack travel mm : 0.50
Check tolerance	Tolerance mm : + 0.50
cm3/1000s. : + 5.0	Rated speed rpm : 1330
Spreed	
Tolerance	
cm3/1000 strokes : 5.0	•
Check tolerance	
cm3/1000s. : 7.0	- LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point work by more apping
CUITAGE OF FELLE PROTECTION	Setting point w/out bumper spring
GUIDE SLEEVE POSITION	Rated speed rpm : 425
†	Rated speed rpm : 425 rack travel mm : 4.30
control lever	Tolerance mm : +- 0.10
position degree : -3	
Rated speed rpm : 800	Testing:
Nated Speed (pill : 555	
Rack travel in mm: 0.50	Rated speed rpm : 425
Tolerance mm : + 0.20	rack travel mm : 4.80
+	Tolerance mm : +- 0.10
	•
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
+	Rated speed rpm : 490
Rated speed rpm : 700 +	Tolerance 1/min : +- 30
Aneroid pressure	
hPa : 1500 +	TOPOUE CONTROL
Del. quantity	TORQUE CONTROL
cm3/1000 strokes : 206.0	Rated speed rpm : 700
Tolerance	Rated speed rpm : 700 rack travel mm : 12.20
cm3/1000 strokes : ← 1.0	Tolerance mm : + 0.05
Check tolerance cm3/1000s. : +- 4.0	roterance min : - 0.05
	Rated speed rpm : 1100
Spreed Tolerance	rack travel mm : 11.80
cm $3/1000$ strokes : 5.0 $+$	Tolerance mm : +- 0.10

Rated speed rpm rack travel mm Tolerance mm	: 825 : 12.00 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.20 : +- 0.10
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 9.10 : +- 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 940 : 2.50 : + 0.10
Pressure hPa rack travel mm Tolerance mm	: 470 : 0.25 : + 0.05
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: 1500
Rated speed rpm	: 1100
Del. quantity cm3/1000 strokes	: 183.0
Tolerance cm3/1000 strokes	: <del></del> 3.0
Check tolerance cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0
Aneroid pressure	
hPa Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 126.0

Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 20.50 : ← 0.50 : 239.0 : ← 10.0 : ← 14.0
LOW IDLE	
Rated speed rpm Del. quantity	: 425
cm3/1000 strokes Tolerance	: 16.0
cm3/1000 strokes Check tolerance	: <b>←</b> 2.5
cm3/1000s. Spreed Tolerance	: +- 5.0
cm3/1000 strokes Check tolerance	: 5.0
cm3/1000s.	: 7.0

End of test specification sheet

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#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.02.97 Edition Test oil : ISO 4113

Combination No. : 0 402 646 640

Injection pump

Pumn designation : PE6P120A320RS7311 EP type number : 0 412 626 932

Governor

Governer design. : RQV275...1150PA1110K

Governer no. : 0 421 815 375

Cust. part No. : 1280143/7

Customer-spec. information

Customer : DAF : RS 222 M Motor

: 222.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +-2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter: 3.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 : +- 0.05 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : **←** 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Tolerance : + 0.10

Check

tolerance \*NW : + 0.75

: 1 Barrel no.

#### BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm: 13.55 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 218.0

Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 2.90
Charle de Laranea	+ Tolerance mm : + 0.25
Check tolerance cm3/1000s. : ← 4.0	Rated speed rpm : 460
tile/ 10000 (	+ guide sleeve
Spreed	+ travel mm : 3.90
- 1	+ Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1480
CHIDY TODO SCYOKES . J.O	+ guide sleeve
Check tolerance	+ travel mm : 13.50
cm3/1000s. : 9.0	+ Tolerance mm : + 0.50
	†
	GUIDE SLEEVE POSITION
Rated speed rpm : 275	+
	+
Rack travel in mm: 3.80	+ control lever
Tolerance mm : +- 0.10	+ position degree : -1 + Rated speed rpm : 1280
Del. quantity cm3/1000 strokes : 16.0	T Rated speed (pill : 1200
Tolerance	Rack travel in mm: 12.80
cm3/1000 strokes : +- 3.0	† Tolerance mm : + 1.30
Check tolerance	+
cm3/1000s. : +- 6.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	T FOLL LOAD DELIVERY AT FOLL LOAD STOP
cm3/1000 strokes : 8.0	+ Rated speed rpm : 1130
Check tolerance	+ Aneroid pressure
cm3/1000s. : 12.0	+ hPa : -
	+ Del. quantity + cm3/1000 strokes : 218.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
	+  cm3/1000s. : + 4.0
GUIDE SLEEVE TRAVEL	+ Spreed + Tolerance
Rated speed rpm : 1203	+ cm3/1000 strokes : 5.0
guide sleeve	+ Check tolerance
travel mm : 10.07	+ cm3/1000s. : 9.0
Tolerance mm : + 0.25	†
Rated speed rpm : 275	I
guide sleeve	CONTROL LEVER
travel mm : 1.56	+
Tolerance mm : + 0.25	+ control lever
Rated speed rpm : 814	+ position degree : 121.0 + tolerance degree : + 4.0
Rated speed rpm : 814 guide sleeve	toterance degree : *** 4.0
travel mm : 6.79	+ RATED SPEED
Tolerance mm : + 0.25	rack travel mm : 12.55
700	Rated speed rpm : 1192
Rated speed rpm : 300	Tolerance 1/min : + 5
<pre>guide sleeve travel mm : 2.13</pre>	T + rack travel mm : 4.00
Tolerance mm : + 0.25	+ Rated speed rpm : 1315
	Tolerance 1/min : + 15
Rated speed rpm : 350	+

rack travel mm Tolerance mm	: 0.70 : +- 0.70	‡	rack travel mm Tolerance imm	
Rated speed rpm			Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 1130
LOW IDLE		‡	MEASUREMENT	0.10
control lever position degree	: 69.0	‡	Rated speed rpm	: 1130
tolerance degree		‡	Pressure hPa rack travel mm	: 12.40
Testing:		<u> </u>	Tolerance mm	: <b>←</b> 0.05
Rated speed rpm rack travel mm Tolerance mm	: 275 : 3.80 : + 0.10	+	Pressure hPa rack travel mm Tolerance mm	: 320 : 10.60 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min		‡	Start interlock	
Rated speed rpm	: 175	+	FUEL DELIVERY CHA	ARACTERISTICS
CRT mm min.	: > 6.00	Ī	Aneroid pressure hPa	: -
TORQUE CONTROL			Rated speed rpm Del. quantity cm3/1000 strokes	
Rated speed rpm rack travel mm	: 1130 : 13.55 : +- 0.05	Ŧ	Tolerance cm3/1000 strokes Check tolerance	
Tolerance mm Rated speed rpm	: 850	Ţ +	cm3/1000s. Spreed	: ← 5.0
rack travel mm Tolerance mm	: 12.80 : + 0.05	‡	Tolerance cm3/1000 strokes Check tolerance	: 8.0
Rated speed rpm rack travel mm	: 775 : 12.45	1	cm3/1000s.	: 12.0
Tolerance mm	: + 0.10	‡	Aneroid pressure hPa	: -
Rated speed rpm rack travel mm	: 650 : 12.20	‡	Rated speed rpm Del. quantity	: 600
Tolerance mm	: + 0.10	1	cm3/1000 strokes Tolerance	: 146.5
Rated speed rpm rack travel mm	: 12.10	+	cm3/1000 strokes Check tolerance	
Tolerance mm	: + 0.10	‡	cm3/1000s.	: +- 4.0
ANEROID/ALTITUDE COMPENSATOR TEST		<del></del>		
SETTING		‡	LOW IDLE	

Rated speed rpm : 275

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Rated speed rpm : 1130 Pressure hPa : 1500

Del. quantity cm3/1000 strokes	:	16.0
Tolerance cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	6.0
Tolerance cm3/1000 strokes	•	8.0
Check tolerance cm3/1000s.	:	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.02.97 Edition Test oil : ISO 4113

Combination No. : 0 400 846 492

Injection pump

Pump designation : PES6A90D410RS2569 EP type number : 0 410 896 071

Governor

Governer design. : RQV300...1400AB1111

: 0 420 212 156 Governer no.

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM 352 Power KW : 88.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

tolerance mm

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.30 Tolerance mm : + 0.05Check : + - 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

Tolerance : ← 0.50

Check

tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1400

9.85 Rack travel in mm : Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : +-0.5

Check tolerance

cm3/1000s. : +- 2.5

Tolerance cm3/1000 strokes : 3.0	†
	CONTROL LEVER
Check tolerance	+
cm3/1000s. : 4.5	+ control lever
	+ position degree : 112.0
	+ tolerance degree : +- 4.0
700	+
Rated speed rpm : 300	+ RATED SPEED
0.70	rack travel mm : 8.80
Rack travel in mm: 8.30	+ Rated speed rpm : 1445
Tolerance mm : + 0.10	+ Tolerance 1/min : + 5
Del. quantity	mark through mm
cm3/1000 strokes : 12.0	rack travel mm : 4.00 Rated speed rpm : 1545
Tolerance cm3/1000 strokes : + 3.0	Tolerance 1/min : + 15
Check tolerance	T Toterance Triming . 4-15
cm3/1000s. : +- 5.0	Frack travel mm : 0.50
Spreed	Tolerance mm : + 0.50
Tolerance	Rated speed rpm : 1630
cm3/1000 strokes : 2.0	The state of the s
Check tolerance	1
cm3/1000s. : 4.0	1
	+ LOW IDLE
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+
	+ control lever
	+ position degree : 72.0
	+ tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	† <u> </u>
	+ Testing:
control lever	+ Rated speed rpm : 300
	rack travel mm : 8.30
position degree : - 1 Rated speed rpm : 1500	+ Tolerance mm : + 0.10
Rated Speed Pall : 1908	T Total and the many
Rack travel in mm : 16.50	rack travel mm : 2.00
Tolerance mm : + 1.30	+ Rated speed rpm : 580
10(c) and c min	+ Tolerance 1/min : +- 30
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Rated speed rpm : 100
	+
Rated speed rpm : 1400	+ CRT mm min. :> 9.80
Aneroid pressure	†
hPa : -	T
Del. quantity	+ TORQUE CONTROL
cm3/1000 strokes : 55.0	† Datad aread area
Tolerance 0.5	Rated speed rpm : 1400
cm3/1000 strokes : +- 0.5	rack travel mm : 9.85 Tolerance mm : +- 0.05
Check tolerance	Tolerance mm : +- 0.05
cm3/1000s. : + 2.5	+ Rated speed rpm : 500
Spreed	+ rack travel mm : 10.85
Tolerance cm3/1000 strokes : 3.0	Tolerance mm : + 0.05
Check tolerance	T roterance imi
T 14 T T T T T T T T T T T T T T T T T T	T Rated speed rpm : 630
cm3/1000s. : 4.5	+ rack travel mm : 10.70
	Tolerance mm : + 0.10
	TOTAL MINE O. IO

1000 Rated speed rpm rack travel mm 10.15 : +- 0.15 Tolerance mm Start interlock 100 Rated speed rpm : > 220 Rated speed rpm : < Check speed 1/min : > 80 Check speed 1/min : < 240 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 48.0 Tolerance cm3/1000 strokes 1.5 Check tolerance

## STARTING FUEL DELIVERY

cm3/1000S.

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 78.0
Tolerance
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000s. : + 8.0

3.5

## LOW IDLE

300 Rated speed rpm Del. quantity cm3/1000 strokes : 12.0 Tolerance 3.0 cm3/1000 strokes Check tolerance 5.0 cm3/1000S.Spreed Tolerance cm3/1000 strokes : 2.0 Check tolerance 4.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.02.97 Test oil : ISO 4113

Combination No. : 0 400 846 558

Injection pump

Pump designation : PES6A90D410RS2667 EP type number : 0 410 896 080

Governor

Governer design. : RQV300...1300AB1065

: 8L

Governer no. : 0 420 212 200

Cust. part No. :

Customer—spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 97.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.30
Tolerance mm : + 0.05
Check

Check tolerance mm

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

: + 0.10

Phasing : 0-60-120-180-240

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 1300

: **←** 2.5

Rack travel in mm: 11.25 Tolerance mm: + 0.05

Del. quantity cm3/1000 strokes : 63.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s.

Tolerance cm3/1000 strokes : 3.0	+ Rack travel in mm : 16.50 + Tolerance mm : + 1.30
Check tolerance cm3/1000s. : 5.0	<u> </u>
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	Rated speed rpm : 1300 Aneroid pressure
	+ hPa : -
Rack travel in mm : 9.20	+ Del. quantity
Tolerance mm : + 0.10	+ cm3/1000 strokes : 63.5
Del. quantity	+ Tolerance
cm3/1000 strokes : 12.0	+ cm3/1000 strokes : +- 0.5
Tolerance	+ Check tolerance
cm3/1000 strokes : + 3.0	+ cm3/1000s. : + 2.5
Check tolerance	+ Spreed
cm3/1000s. : +- 5.0	+ Tolerance
Spreed	- cm3/1000 strokes : 3.0
Tolerance	+ Check tolerance + cm3/1000s. : 5.0
cm3/1000 strokes : 2.5	+ cm3/1000s. : 5.0
Check tolerance cm3/1000s. : 4.5	<b>†</b>
cm3/1000s. : 4.5	I
	T CONTROL LEVER
(B) SETTING OF INJECTION PUMP	T CONTINUE EEVEN
WITH GOVERNOR	- control lever
WZ111 00421/1011	position degree : 115.0
	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	+
	+ RATED SPEED
Dimension a mm : 1.00	rack travel mm : 10.20
Rated speed rpm : 1500	Rated speed rpm : 1345
guide sleeve	+ Tolerance 1/min : + 5
travel mm : 8.55	+
Tolerance mm : +- 0.05	+ rack travel mm : 4.00
	+ Rated speed rpm : 1480
Rated speed rpm : 300	+ Tolerance 1/min : + 15
guide sleeve	0.50
travel mm : 1.05	+ rack travel mm : 0.50
Tolerance mm : +- 0.25	+ Tolerance mm : +- 0.50 + Rated speed rpm : 1600
Rated speed rpm : 500	+ Rated speed rpm : 1600
Rated speed rpm : 500 guide sleeve	I
travel mm : 2.55	1
Tolerance mm : +- 0.25	
	+ LOW IDLE
Rated speed rpm : 750	1
guide sleeve	+
travel mm : 4.20	+ control lever
Tolerance mm : + 0.10	+ position degree : 80.0
	+ tolerance degree : +- 4.0
	†
GUIDE SLEEVE POSITION	+ Testing:
	T Dated award www. 200
and all lavas	Rated speed rpm : 300
control lever	+ rack travel mm : 9.20 + Tolerance mm : + 0.10
position degree : - 1	† Tolerance mm : + 0.10
Rated speed rpm : 1500	Rated speed rpm : 100
	T varied sheed thin . Too

: > 10.60 CRT mm min.

Rated speed rpm : 588

TORQUE CONTROL

1300 Rated speed rpm : 11.25 rack travel mm : + 0.05 Tolerance mm

Rated speed rpm 750 rack travel mm 12.05 : + 0.05Tolerance mm

Rated speed rpm 950 rack travel mm 11.80 : + 0.10 Tolerance mm

Rated speed rpm : 1100 : 11.45 rack travel mm : + 0.15 Tolerance mm

Start interlock

100 Rated speed rpm : > Rated speed rpm : < 220

Check

speed 1/min : > 80

Check

: < speed 1/min 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm 750

Del. quantity

cm3/1000 strokes : 56.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : **←** 3.5

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 17.10 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes : +- 5.0

Check tolerance cm3/1000s.

: +- 8.0

LOW IDLE

300 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. : +-5.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s.4.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 14.02.97 Edition : ISO 4113 Test oil

Combination No. : 0 400 846 563

Injection pump

Pump designation : PES6A90D410RS2667 : 0 410 896 080 EP type number

Governor

Governer design. : RQV300...1200AB1065

: 15L

: 0 420 212 210 Governer no.

Cust. part No. :

Customer-spec. information : MB-NFZ Customer : OM 366 Motor : 92.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet

temp. °C Tolerance °C : +- 2.0

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

: 1 680 750 015 Test lines

Outside diameter : 6.0

x inside diameter: 1.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.30 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

: + 0.75tolerance "NW

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.10

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 58.5

Tolerance

cm3/1000 strokes : +-0.5

Check tolerance

cm3/1000s. : +-2.5

Tolerance -	<del> </del>
cm3/1000 strokes : 3.0	
	CONTROL LEVER
Check tolerance -	
cm3/1000s. : 7.0	control Lever
	position degree : 113.0
-	tolerance degree : + 4.0
•	totol allog dog. oc to the
Rated speed rpm : 300 -	RATED SPEED
That car ope car i più	rack travel mm : 10.10
Rack travel in mm: 9.00	Rated speed rpm : 1245
Tolerance mm : + 0.10	Tolerance 1/min : + 5
Del. quantity -	
cm3/1000 strokes : 11.0 -	rack travel mm : 4.00
Tolerance	Rated speed rpm : 1345
cm3/1000  strokes : + 2.0	Tolerance 1/min : +- 15
Check tolerance -	
cm3/1000s. : +- 4.0	rack travel mm : 0.50
Spreed	Tolerance mm : + 0.50
Tolerance	Rated speed rpm : 1500
cm3/1000 strokes : 4.5	<b>-</b>
Check tolerance	
cm3/1000s. : 7.0	
-	
	- LOW IDLE
(B) SETTING OF INJECTION PUMP	-
WITH GOVERNOR	-
•	- control lever
-	position degree : 77.0
	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	
<del>-</del>	- Testing:
	100011191
<del>,</del>	
control lever	Rated speed rpm : 300
position degree : -1	Rated speed rpm : 300 rack travel mm : 9.00
	Rated speed rpm : 300
position degree : - 1 Rated speed rpm : 1260 -	Rated speed rpm : 300 - rack travel mm : 9.00 - Tolerance mm : +- 0.10
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50	Rated speed rpm : 300 rack travel mm : 9.00
position degree : - 1 Rated speed rpm : 1260	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10 Rated speed rpm : 100
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50	Rated speed rpm : 300 - rack travel mm : 9.00 - Tolerance mm : +- 0.10
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 10.30
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10 Rated speed rpm : 100
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 10.30
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 10.30
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : -	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 strokes : + 0.5	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 12.45
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5  Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 12.45 Tolerance mm : + 0.05
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5  Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 12.45 Tolerance mm : + 0.05  Rated speed rpm : 900
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s: + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 12.45 Tolerance mm : + 0.05  Rated speed rpm : 900 rack travel mm : 900 rack travel mm : 12.10
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5  Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 12.45 Tolerance mm : + 0.05  Rated speed rpm : 900
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s: + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 12.45 Tolerance mm : + 0.05  Rated speed rpm : 900 rack travel mm : 12.10 Tolerance mm : + 0.10
position degree : - 1 Rated speed rpm : 1260  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s: + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	Rated speed rpm : 300 rack travel mm : 9.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 10.30  Rated speed rpm : 610  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 12.45 Tolerance mm : + 0.05  Rated speed rpm : 900 rack travel mm : 12.10 Tolerance mm : + 0.10

Tolerance mm	: <b>←</b> 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 220
Check speed 1/min Check	; > 80
speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	· -
Rated speed rpm Del. quantity	: 600
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	; <del>+-</del> 1.0
cm3/1000s.	: <del></del>
Aneroid pressure hPa Rated speed rpm	: - : 900
Del. quantity cm3/1000 strokes	: 57.5
Tolerance cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000s.	: + 3.5
STARTING FUEL DEL	TVERY
Rated speed rpm	: 100
rack travel mm	: 17.20 : +- 0.20
Del. quantity cm3/1000 strokes	: 83.0
Tolerance cm3/1000 strokes	: <del>+-</del> 7.5
Check tolerance cm3/1000s.	: + 10.0
LOW IDLE	
Rated speed rpm Del. quantity	: 300
cm3/1000 strokes Tolerance	: 11.0
cm3/1000 strokes	: +- 2.0

Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 4.5 Check tolerance cm3/1000s. : 7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.02.97 Test oil : ISO 4113

Combination No. : 0 400 863 020

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A5C858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1592 KY

Customer-spec. information Customer : KHD-DMI

Motor : F3L912/913\_NEU

Power KW : 40.5

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm: 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance : + 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.35

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  3.0

Tolerance cm3/1000 strokes : 3.5 Check tolerance	Check tolerance cm3/1000s. : 8.0
cm3/1000s. : 8.0	CONTROL LEVER
Rated speed rpm : 325	<pre>control lever position degree : 102.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 8.50 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 11.5	RATED SPEED rack travel mm : 10.35 Rated speed rpm : 1295
Tolerance cm3/1000 strokes : + 2.0	Tolerance 1/min : + 5 rack travel mm : 4.00
Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance +	Rated speed rpm : 1339 Tolerance 1/min : + 15
cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1510
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00 Rated speed rpm : 1360
WITH GOVERNOR	
GUIDE SLEEVE POSITION	LOW IDLE
GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 69.0 tolerance degree : + 4.0
control lever position degree : FREE	control lever position degree : 69.0 tolerance degree : + 4.0 Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 69.0 tolerance degree : + 4.0
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : +- 0.05

Rated speed rpm : 750

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 130.0
Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

#### LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.02.97 Edition Test oil : ISO 4113

Combination No. : 0 400 863 021

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...900A1C859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1593 KY

Customer-spec. information

Customer : KHD-DMI : F3L912/913 NEU Motor

Power KW : 40.5

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 : <del>+-</del> 1.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 677

REMA (KS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : Tolerance mm : +-: + 0.05Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240 Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: +- 3.0

cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance 8.0	
	CONTROL LEVER
	control lever
Rated speed rpm : 325	+ position degree : 90.0 + tolerance degree : + 4.0
Rack travel in mm: 7.90	+
olerance mm : + 0.10	+ RATED SPEED
Del. quantity	rack travel mm : 10.80
m3/1000 strokes : 11.5	Rated speed rpm : 895
Tolerance	+ Tolerance 1/min : + 5
m3/1000 strokes : +- 2.0	
Check tolerance	rack travel mm : 4.00
m3/1000s, : +- 4.5	Rated speed rpm : 920
Spreed	Tolerance 1/min : + 10
opreed Tolerance	I roterance triniti
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
:m3/1000s. : 9.0	Rated speed rpm : 1090
	rack travel mm : 4.00
B) SETTING OF INJECTION PUMP	Rated speed rpm : 940
WITH GOVERNOR	‡
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
position degree : FREE	+ position degree : 68.0
	tolerance degree : + 4.0
Rated speed rpm : 800 Rack travel in mm : 0.50	tolerance degree : + 4.0  Setting point w/out bumper spring
Rated speed rpm : 800 Rack travel in mm : 0.50 Folerance mm : + 0.20	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
Rated speed rpm : 800 Rack travel in mm : 0.50 Folerance mm : + 0.20 Rovernor spring	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40
<pre>dated speed rpm : 800 dack travel in mm : 0.50 dolerance mm : + 0.20 dovernor spring dore-tension</pre>	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
ated speed rpm : 800  ack travel in mm : 0.50  olerance mm : + 0.20  overnor spring re-tension	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40
ated speed rpm : 800  ack travel in mm : 0.50 colerance mm : + 0.20 covernor spring cre-tension lick setting x : 2.50	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:
Rated speed rpm : 800 Rack travel in mm : 0.50 Folerance mm : + 0.20 Rovernor spring Rack travel in mm : 0.50 Rovernor spring	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
Rated speed rpm : 800  Rack travel in mm : 0.50  Foliation : + 0.20  Reversor spring re-tension  Lick setting x : 2.50  RULL LOAD DELIVERY AT FULL LOAD STOP	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90
wated speed rpm : 800  wack travel in mm : 0.50  colerance mm : + 0.20  covernor spring  cre-tension  lick setting x : 2.50  ULL LOAD DELIVERY AT FULL LOAD STOP	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
Rated speed rpm : 800  Rack travel in mm : 0.50  Foliation : + 0.20  Revernor spring re-tension  Lick setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10
ated speed rpm : 800  ack travel in mm : 0.50 olerance mm : + 0.20  overnor spring re-tension lick setting x : 2.50  ULL LOAD DELIVERY AT FULL LOAD STOP  ated speed rpm : 850 neroid pressure	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10  rack travel mm : 2.00
Rated speed rpm : 800  Rack travel in mm : 0.50 Folerance mm : + 0.20  Rovernor spring Fore-tension Lick setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Fore-roid pressure  Pa : -	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10
Rated speed rpm : 800  Rack travel in mm : 0.50  Tolerance mm : + 0.20  Revernor spring Revern	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10  rack travel mm : 2.00
Rated speed rpm : 800  Rack travel in mm : 0.50 Folerance mm : + 0.20  Rovernor spring Pre-tension Click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Rependent speed rpm : 850 Rependent speed rpm : - 0.00  Rated speed rpm : - 0.00  Rated speed rpm : 850  Rependent rependen	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 415
Rack travel in mm: 0.50 Folerance mm: + 0.20  Rovernor spring Fore-tension Flick setting x: 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm: 850 Interoid pressure Fight : - Fight 1000 strokes: 80.0  Folerance	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30
ated speed rpm : 800  ack travel in mm : 0.50 olerance mm : + 0.20  overnor spring re-tension lick setting x : 2.50  ULL LOAD DELIVERY AT FULL LOAD STOP  ated speed rpm : 850 neroid pressure Pa : - el. quantity m3/1000 strokes : 80.0 olerance m3/1000 strokes : + 1.0	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30
ated speed rpm : 800  ack travel in mm : 0.50 olerance mm : + 0.20  overnor spring re-tension lick setting x : 2.50  ULL LOAD DELIVERY AT FULL LOAD STOP  ated speed rpm : 850 neroid pressure Pa : - el. quantity m3/1000 strokes : 80.0 olerance	tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30

Rated speed rpm : 850 rack travel mm : 11.80 Tolerance mm : + 0.05

Rated speed rpm : 500

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5 Check tolerance

cm3/1000s. : + 10.0

## LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance cm3/1000s. : + 4.5

Spreed

Tolerance cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19,02,97 Test oil : 19.02.97

Combination No. : 0 400 863 022

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A5C860L

Governer no. : 0 420 232 623

Cust. part No. : 0423 1730 KY

Customer-spec. information

Customer : KHD-DMI : F3L912/913\_NEU Motor

Power KW : 44.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

2.0 x inside diameter: x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05 3.00 Check tolerance mm : +- 0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

Firing order : 1- 3- 2

: 0-120-240 Phasing Tolerance : +- 0.50 Check

tolerance \*NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.35 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s.

: +- 3.0

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance - cm3/1000s. : 8.0 -	CONTROL LEVER
	COMIKOL LEVEK
Rated speed rpm : 325	control lever position degree : 102.0 tolerance degree : +- 4.0
Rack travel in mm: 8.50 -	
Tolerance mm : + 0.10	RATED SPEED
Del, quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance - cm3/1000 strokes : + 2.0 -	Tolerance 1/min : ← 5
Check tolerance	rack travel mm : 4.00
cm3/1000s. : + 4.5	Rated speed rpm : 1339
Spreed	Tolerance 1/min : + 15
Tolerance	
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance -	Tolerance mm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1510
•	t
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1360
	F .
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
	control lever
control lever position degree : FREE	control lever position degree : 69.0 tolerance degree : +- 4.0 Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	control lever position degree : 69.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 69.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 69.0 tolerance degree : 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : -	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre—tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	control lever position degree : 69.0 tolerance degree : 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 750

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 130.0 Tolerance

cm3/1000 strokes : + 7.5

Check tolerance cm3/1000s. : +- 10.0

## LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.02.97 Test oil : ISO 4113

Combination No. : 0 400 863 023

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A5C861L

Governer no. : 0 420 232 624

Cust. part No. : 0423 1731 KY

Customer-spec. information

Customer : KHD-DMI

Motor : F3L912/913\_NEU

Power KW : 44.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance : + 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	
	CONTROL LEVER
Rated speed rpm : 325	<pre>control lever position degree : 102.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 8.50	+
Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance	† Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	†
Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 4.00
Spreed 4.5	Rated speed rpm : 1339
Tolerance	Tolerance 1/min : + 15
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	+ Tolerance ram : + 0.55
cm3/1000s. : 9.0	+ Tolerance num : + 0.55 + Rated speed rpm : 1510
	+
(D) OFFILM OF THE POTTON DUM	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1360
WITH GOVERNOR	†
	I
GUIDE SLEEVE POSITION	+ LOW IDLE
	+
control loven	+
control lever	control lever
position degree : FREE	+ position degree : 69.0
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50	+ position degree : 69.0
position degree : FREE Rated speed rpm : 800	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : -	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 750

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : - 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.02.97 : ISO 4113

Combination No. : 0 400 874 226

Injection pump

Pump designation : PES4A90D410RS2570 EP type number : 0 410 894 023

Governor

Governer design. : RSV350...1400A0C2070

Governer no. : 0 420 232 400

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM 314 Power KW : 62.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.30 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270 Tolerance : **←** 0.50

Check

tolerance °NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 11.95 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 62.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s. : +-2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

C03

Check tolerance cm3/1000s.	: 4.5	control lever position degree tolerance degree	: 57.0 : + 4.0
Rated speed rpm Rack travel in mm	+	RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 1425
Tolerance mm Del. quantity		rack travel mm	
cm3/1000 strokes Tolerance	: 9.0	Rated speed rpm Tolerance 1/min	: 1495
cm3/1000 strokes Check tolerance	: +- 4.0	rack travel mm	: 1.00
cm3/1000s. Spreed Tolerance	: + 6.0	Tolerance mm Rated speed rpm	: <del></del> 0.70
cm3/1000 strokes Check tolerance	+		
cm3/1000s.	: 4.0	LOW IDLE	
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	control lever position degree tolerance degree	
GUIDE SLEEVE POSIT	TION	Testing:	
control lever position degree Rated speed rpm Rack travel in mm Tolerance mm	: 0.65	Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min	: 8.90 : + 0.10 : 2.00 : 465
FULL LOAD DELIVERY	AT FULL LOAD STOP	TORQUE CONTROL	
Rated speed rpm Ameroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 62.0 : + 0.5 : + 2.5	Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 11.95 : + 0.05 : 600 : 12.65 : + 0.05 : 900 : 12.30
			······
CONTROL LEVER	1	FUEL DELIVERY CHA	RACTERISTICS

Aneroid pressure hPa 600 Rated speed rpm Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s.3.5 Aneroid pressure hPa Rated speed rpm 900 Del. quantity cm3/1000 strokes : 60.5 Tolerance cm3/1000 strokes Check tolerance 4.0 cm3/1000s. STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes 5.0 Check tolerance cm3/1000s. 8.0 LOW IDLE Rated speed rpm 350 Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 strokes : +-4.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 4.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.02.97 Test oil : ISO 4113

Combination No. : 0 400 874 243

Injection pump

Pump designation : PES4A90D410RS2666 EP type number : 0 410 894 029

Governor

Governer design. : RSV350...1200A2C1139

: -2L

Governer no. : 0 420 232 471

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364
Power KW : 50.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.30 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.45
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 49.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

C06

	+		
Check tolerance	+	control lever	
cm3/1000s. :	5.0	position degree	: 103.0
		tolerance degree	
	+	•	
	+	RATED SPEED	
Rated speed rpm : 3	50 +		
Del. quantity	+	rack travel mm	: 0.85
	11.0	Tolerance mm	: +- 0.55
Tolerance	+	Rated speed rpm	: 1530
cm3/1000 strokes : +-	1.0	•	
Check tolerance	+	rack travel mm	
cm3/1000s. : +-	3.0 +	Rated speed rpm	: 1338
Spreed	+		
Tolerance	+		
	2.5		
Check tolerance			<del></del>
cm3/1000s. :	4.5	LOW IDLE	
	+		
	+	Setting point w/o	ut bumper spring
(3) SETTING OF INJECTION	PUMP +		
WITH GOVERNOR	†	Rated speed rpm	
	t	rack travel mm Tolerance mm	: 8.40
	†	Tolerance mm	: ← 0.10
CHINE SI SELIE POSTITION		#==#.3	
GUIDE SLEEVE POSITION	Ť	Testing:	
	†	manle Assertal ass	. 2.00
control lever	Ť	rack travel mm	: 2.00
position degree : - 3	Ť	Rated speed rpm Tolerance 1/min	
	oo I	rocerance rimin	: <b>←</b> 30
rated speed rpill : O	I	Dated speed now	: 100
Rack travel in mm : (	n 50 I	Rated speed rpm	: 100
Tolerance mm : +- (		CRT mm min.	: > 19.50
rocci di loc man	I	CIVI HIMI HITTI.	. > 17.50
governor spring	1		
pre-tension	1	TORQUE CONTROL	
	5.00		
	1	Rated speed rpm	: 1200
		rack travel mm	: 9.45
FULL LOAD DELIVERY AT FUL	LL LOAD STOP	Tolerance mm	: +- 0.05
	+		
Rated speed rpm : 120	DO +	Rated speed rpm	: 800
Aneroid pressure	+	rack travel mm	: 10.55
hPa :	- +	Tolerance mm	: +- 0.05
Del. quantity	+		
	49.5	Rated speed rpm	: 950
Tolerance	+	rack travel mm	: 10.40
	0.5	Tolerance mm	: +- 0.10
Check tolerance	<b>.</b>		
cm3/1000s. : +-	2.5	Rated speed rpm	: 1050
Spreed	†	rack travel mm	9.85
Tolerance	7,	Tolerance mm	: + 0.15
cm3/1000 strokes :	3.0		
Check tolerance	+	<b>01</b>	
cm3/1000s. :	5.0	Start interlock	
	Ť		
CONTROL LEVER	<u> </u>	FUEL DELIVERY CHAI	DACTEDICTICS
CONTROL LEVER	Ť	LOEF DEFINEKT CHAI	UMCIEKT91169

: 800 : 46.0 : + 1.0 : + 3.5 : 1000 : 49.5
: + 1.0 : + 3.5 : - : 1000 : 49.5
: + 3.5 : - : 1000 : 49.5
: - : 1000 : 49.5
: 49.5
: 49.5
: <del>+</del> 1.5
: + 4.0
: 100 : 16.40
: + 0.20
: 85.0
: + 5.0
: +- 8.0
: 350
: 11.0
: + 1.0
: ← 3.0
: 2.5
: 4.5
·

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.02.97 Test oil : ISO 4113

Combination No. : 0 400 874 244

Injection pump

Pump designation : PES4A90D410RS2666 EP type number : 0 410 894 029

Governor

Governer design. : RSV350...1200A2C1139

: -3L

Governer no. : 0 420 232 472

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : 0M364 Power KW : 57.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. \*C : 40
Tolerance \*C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-130-270

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.55 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 54.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : + 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

CO9

<b>a</b> l	
Check tolerance cm3/1000s.	: 5.0
Rated speed rpm Del. quantity	: 350
cm3/1000 strokes Tolerance	: 11.0
cm3/1000 strokes Check tolerance	: <b>←</b> 1.0
cm3/1000s.	: 3.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 2.5
cm3/1000s.	: 4.5
(0) 0777110 07 11	
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP
GUIDE SLEEVE POSI	(TTON
ROTHE OFFERE LOST	LITOIA
control lever	
position degree	: - 3
	: - 3 : 800
position degree Rated speed rpm Rack travel in mm	n: 0.50
position degree Rated speed rpm	
position degree Rated speed rpm Rack travel in m Tolerance mm governor spring	n: 0.50
position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring pre-tension	0.50 : +- 0.20
position degree Rated speed rpm Rack travel in m Tolerance mm governor spring	n: 0.50
position degree Rated speed rpm Rack travel in mn Tolerance mm governor spring pre-tension click setting x	0.50 : +- 0.20
position degree Rated speed rpm  Rack travel in mn Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVER Rated speed rpm	: 0.50 : + 0.20 : 4.70
position degree Rated speed rpm Rack travel in mn Tolerance mm governor spring pre-tension click setting x  FULL LOAD DELIVER Rated speed rpm Aneroid pressure	: 0.50 : + 0.20 : 4.70
position degree Rated speed rpm  Rack travel in mn Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity	: 0.50 : + 0.20 : 4.70 RY AT FULL LOAD STOP : 1200 : -
position degree Rated speed rpm Rack travel in mn Tolerance mm governor spring pre-tension click setting x  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 0.50 : + 0.20 : 4.70 RY AT FULL LOAD STOP : 1200
position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 0.50 : + 0.20 : 4.70 RY AT FULL LOAD STOP : 1200 : -
position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring pre-tension click setting x  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	1: 0.50 : + 0.20 : 4.70 RY AT FULL LOAD STOP : 1200 : - : 54.5
position degree Rated speed rpm  Rack travel in mm  Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVER  Rated speed rpm  Aneroid pressure hPa  Del. quantity cm3/1000 strokes  Tolerance cm3/1000 strokes  Check tolerance cm3/1000s.  Spreed	: 0.50 : + 0.20 : 4.70 : 4.70 : 1200 : - : 54.5 : + 0.5
position degree Rated speed rpm  Rack travel in mn Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance	: 0.50 : + 0.20 : 4.70 : 4.70 : 1200 : - : 54.5 : + 0.5 : + 2.5
position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	1: 0.50 : + 0.20 : 4.70 RY AT FULL LOAD STOP : 1200 : - : 54.5 : + 0.5 : + 2.5

control lever position degree tolerance degree	: 98.0 : + 4.0
RATED SPEED	
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1450
rack travel mm Rated speed rpm	: 4.00 : 1346
rack travel mm Rated speed rpm Tolerance 1/min	: 1245
LOW IDLE	
	out bumper spring
Rated speed rpm rack travel mm Tolerance mm	
Testing:	
rack travel mm	: 2.00
Rated speed rpm Tolerance 1/min	: 550
Rated speed rpm	: 550 : <del>+</del> 30
Rated speed rpm Tolerance 1/min	: 550 : <del>+</del> 30
Rated speed rpm Tolerance 1/min Rated speed rpm	: 550 : + 30 : 100
Rated speed rpm Tolerance 1/min Rated speed rpm CRT mm min.	: 550 : + 30 : 100
Rated speed rpm Tolerance 1/min Rated speed rpm CRT mm min. TORQUE CONTROL Rated speed rpm rack travel mm	: 550 : + 30 : 100 : > 19.50 : 1200 : 10.55
Rated speed rpm Tolerance 1/min Rated speed rpm CRT mm min.  TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm	: 550 : + 30 : 100 : > 19.50 : 1200 : 10.55 : + 0.05 : 800 : 12.05

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm 800 Del. quantity

cm3/1000 strokes : 56.0

Tolerance

cm3/1000 strokes 1.0 Check tolerance 3.5

cm3/1000s.

Aneroid pressure

hPa Rated speed rpm 1050

Del. quantity

cm3/1000 strokes : 56.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +-3.5

### STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 16.30 : Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 strokes 5.0

Check tolerance

cm3/1000s. : +-8.0

## LOW IDLE

Rated speed rpm 350

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. 4.5

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17,02,97 Test oil : ISO 4113

Combination No. : 0 400 876 108

Injection pump

Pump designation : PES6A80D410RS2085X

EP type number : 0 410 886 045

Governor

Governer design. : RSV350...1400A2c1001

Governer no. : 0 420 232 464

Cust. part No. :

Customer-spec, information Customer : MB-NFZ : 0M352 Motor Power KW : 66.0

# TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.20 : + 0.05 Tolerance mm Check tolerance mm : + 0.10

Rack travel in mm: 10.50 : + 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : + - 0.50

Check

tolerance  $^{\circ}NW$  : + 0.75

#### BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.55 : + 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s. : +- 2.0

Spreed

c12

Tolerance cm3/1000 strokes : 2.0	+ Spreed + Tolerance
Check tolerance	cm3/1000 strokes : 2.0 Check tolerance
cm3/1000s. : 3.5	cm3/1000s. : 3.5
Rated speed rpm : 350	CONTROL LEVER
Rack travel in mm: 7.50	- control lever
Tolerance mm : +- 0.10	position degree : 100.0
Del. quantity cm3/1000 strokes : 12.0	tolerance degree : + 4.0
Tolerance	RATED SPEED
cm3/1000 strokes : +- 2.0	+ rack travel mm : 7.50
Check tolerance	rack travel mm : 7.50 Rated speed rpm : 1460
cm3/1000s. : +- 3.5 Spreed	+ Tolerance 1/min : + 5
Tolerance	+ rack travel mm : 4.00
cm3/1000 strokes : 2.0	+ Rated speed rpm : 1490
Check tolerance cm3/1000s. : 3.5	Tolerance 1/min : +- 15
CIID/10003. ; 3.3	rack travel mm · 0.85
	+ Tolerance mm : +- 0.55
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1600
	rack travel mm : 4.00
	Rated speed rpm : 1540
GUIDE SLEEVE TRAVEL	+
Dimension a mm : 0.50	+
GUIDE SLEEVE POSITION	LOW IDLE
	Testing:
control lever	Rated speed rpm : 350
position degree : - 3	rack travel mm : 7.50 Tolerance mm : + 0.10
Rated speed rpm : 800	+ Tolerance mm : + 0.10
Rack travel in mm : 0.65	rack travel mm : 2.00
Tolerance mm : + 0.35	Rated speed rpm : 760
governor spring	Tolerance 1/min : + 30
pre-tension	Rated speed rpm : 100
click setting x : 4.50	+ CRT mm min. : > 19.50
	+
FULL LOAD DELIVERY AT FULL LOAD STOP	TORQUE CONTROL
Rated speed rpm : 1400	TONGOE GOITHOE
Aneroid pressure	+ Rated speed rpm : 1400
hPa : -	rack travel mm : 8.55 Tolerance mm : + 0.05
Del. quantity cm3/1000 strokes : 42.0	† Tolerance mm : + 0.05
Tolerance : 42.0	Rated speed rnm · 500
cm3/1000 strokes : +- 0.5	nateu speeu (piii : 300
	+ rack travel mm : 9 x5
Check tolerance cm3/1000s. : +- 2.0	Rated speed rpm : 500 rack travel mm : 9.85 Tolerance mm : + 0.05

Rated speed rpm 008 : rack travel mm ; 8.95 Tolerance mm : + 0.15

Start interlock

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 41.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. 3.0 : +-

Aneroid pressure

hPa

008 Rated speed rpm

Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +-3.0

## STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes : +-5.0

Check tolerance

cm3/1000s. : +- 8.0

## LOW IDLE

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

3.5 cm3/1000s.: +-

Spreed

Tolerance

cm3/1000 strokes : 2.0

Check tolerance

3.5 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.02.97 : ISO 4113

Combination No. : 0 400 876 192

Injection pump

Pump designation : PES6A90D410RS2293 EP type number : 0 410 896 031

Governor

Governer design. : RSV575...1250A1C618L

Governer no. : 0 420 232 407

Cust. part No. :

Customer-spec. information Customer : MB-NFZ : OM 352

Motor Power KW

: 88.3

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C Tolerance °C : <del>+-</del> 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

rest pressure bar : 26.0 Tolerance bar : + 1.0 Test pressure bar :

Prestroke mm : 2.20 : +- 0.05 Tolerance mm

Check

talerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : +~ 0.50

Check

tolerance \*NW : **←** 0.75

BASIC SETTING

Del. quantity

cm3/1000 strokes : 61.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.

4.5

Rated speed rpm : 575	ASSEMBLY GOVERNOR SETTING
Rack travel in mm : 6.50 Tolerance mm : + 0.10 Del. quantity	Rated speed rpm : 1251 Tolerance 1/min : +- 1 rack travel mm : 9.50
cm3/1000 strokes : 13.0	+
Tolerance cm3/1000 strokes : +- 3.0	+ Rated speed rpm : 1280 + Tolerance 1/min : +- 5
Check tolerance	rack travel mm : 4.00
cm3/1000s. : + 5.0 Spreed	+ rack travel mm : 1.00
Tolerance cm3/1000 strokes : 2.0	+ Tolerance mm : + 0.70 + Rated speed rpm : 1350
Check tolerance	Traced speed 1 pm : 1330
cm3/1000s. : 4.0	+ Rated speed rpm : 1253
	+ Tolerance 1/min : +- 1
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 9.50
	+ Rated speed rpm : 1282
	Tolerance 1/min : +- 5 + rack travel mm : 4.00
GUIDE SLEEVE POSITION	+
	+ rack travel mm : 1.00
control lever	+ Tolerance mm : + 0.70 + Rated speed rpm : 1350
position degree : - 3	+ 10.50
Rated speed rpm : 800	+
Rack travel in mm : 0.65	+ Rated speed rpm : 1255 + Tolerance 1/min : +- 1
Tolerance mm : +- 0.35	+ Tolerance 1/min : + 1 + rack travel mm : 9.50
	+
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1284 Tolerance 1/min : +- 5
FOLL LOAD DELIVERY AT FOLL LOAD STOP	Tolerance 1/min : +- 5 + rack travel mm : 4.00
Rated speed rpm : 1230	+
Aneroid pressure	+ rack travel mm : 1.00 + Tolerance mm : + 0.70
hPa : - Del. quantity	+ Tolerance mm : + 0.70 + Rated speed rpm : 1350
cm3/1000 strokes : 61.5	+ Nated speed (pin . 1550
Tolerance	+
cm3/1000 strokes : +- 0.5 Check tolerance	Rated speed rpm : 1257 Tolerance 1/min : + 1
cm3/1000s. : +- 2.5	+ rack travel mm : 9.50
Spreed	+
Tolerance	+ Rated speed rpm : 1286
cm3/1000 strokes : 3.0 Check tolerance	Tolerance 1/min : + 5 rack travel mm : 4.00
cm3/1000s. : 4.5	+
	+ rack travel mm : 1.00
	Tolerance mm : + 0.70 + Rated speed rpm : 1350
CONTROL LEVER	+ Nateu speed (pill : 1550
	+
control lever	+ Rated speed rpm : 1259 + Tolerance 1/min : + 1
position degree : 62.0 tolerance degree : + 4.0	+ Tolerance 1/min : + 1 + rack travel mm : 9.50
Total and degree	+
	+ Rated speed rpm : 1288

Tolerance 1/min rack travel mm	: + 5 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: 1.00 : ← 0.70 : 1350
Rated speed rpm rack travel mm	: 1260 : 9.50
Rated speed rpm Tolerance 1/min rack travel mm	: 1290 : + 5 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: 1.00 : + 0.70 : 1350
LOW IDLE	
LOW IDLE  control lever position degree tolerance degree	: 28.0 : +- 4.0
control lever position degree	
control lever position degree tolerance degree	
control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm	: +- 4.0 : 575 : 6.50
control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm	: +- 4.0 : 575 : 6.50 : + 0.10 : 2.00 : 620

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 83.0 : + 5.0 : + 8.0
LOW IDLE	
Rated speed rpm Del. quantity	: 575
cm3/1000 strokes	: 13.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000S. Spreed	: +- 5.0
Tolerance cm3/1000 strokes	: 2.0
Check tolerance cm3/1000s.	: 4.0

End of test specification sheet

STARTING FUEL DELIVERY

Start interlock

Rated speed rpm : 100

Rated speed rpm : 650

SET IDLE AUXILIARY SPRING

Rated speed rpm : 650

CRT mm max. : < 1.00

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 14,09,96 Edition Test oil : ISO 4113

Combination No. : 0 400 876 218

Injection pump

Pump designation : PES6A90D410RS2293 EP type number : 0 410 896 031

Governor

Governer design. : RSV350...1400A0C1080

Governer rio. : 0 420 232 408

Cust. part No. :

Customer-spec. information Customer : MB-NF7 : OM 352 Motor : 92.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar 173.5 Tolerance bar : + 1.5

: 1 680 750 014 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.20 : + - 0.05Tolerance mm Check

tolerance mm

: +- 0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.75

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 63.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : +- 2.5

Spreed

C18

Tolerance cm3/1000 strokes	: 3.0		
		+ CONTROL LEVER	
Check tolerance	: 4.5	t control lever	
CIID7 10000 L	• •• •	position degree	• 118 0
		+ tolerance degree	
	750	+	
Rated speed rpm Del. quantity	: 350	T RATED SPEED	
cm3/1000 strokes	: 11.0	+ rack travel mm	: 0.85
Tolerance		Tolerance mm	: <b>←</b> 0.55
cm3/1000 strokes	: +- 1.0	+ Rated speed rpm	: 1570
Check tolerance cm3/1000s.	; <del>+</del> 3.0	† + rack travel mm	: 4.00
Spreed	3.0	+ Rated speed rpm	
Tolerance	•	+	
cm3/1000 strokes	: 2.5	+ rack travel mm	
Check tolerance cm3/1000S.	: 4.5	+ Rated speed rpm + Tolerance 1/min	
the/10003.	• 4.3	T Total ance Thirth	. — )
		+	
(B) SETTING OF IN-	JECTION PUMP	†	
WITH GOVERNOR		LOW IDLE	
		+ Setting point w/o	out humner enring
GUIDE SLEEVE POSI	TION	+	ode balliper spring
		+ Rated speed rpm	
aamama L. Bayran		+ rack travel mm	
control lever position degree	: - 3	Tolerance mm	: +- 0.10
Rated speed rpm		+ Testing:	
made Austral &	0.50	+	2.00
Rack travel in mm Tolerance mm	_	+ rack travel mm + Rated speed rpm	: 2.00 : 2775
10 cci di loc inin	. , 0.20	+ Tolerance 1/min	
governor spring		+	
pre-tension	7.50	+ Rated speed rpm	: 100
click setting x	: 3.50	+ CRT mm min.	: > 19.50
		T CIXT IIII III III	. > 17.50
FULL LOAD DELIVER	Y AT FULL LOAD STOP		
Rated speed rpm	: 1400	TORQUE CONTROL	
Aneroid pressure	. 1400	T Rated speed rpm	: 1400
hPa	•	+ rack travel mm	: 9.75
Del. quantity	<b></b> -	+ Tolerance mm	: +- 0.05
cm3/1000 strokes	: 63.5	Datad anada ana	. 400
Tolerance cm3/1000 strokes	: +- 0.5	+ Rated speed rpm + rack travel mm	: 600 : 10.00
Check tolerance	·	Tolerance mm	
cm3/1000s.	: +- 2.5	+	
Spreed		Chamb du hi mi	
Tolerance cm3/1000 strokes	: 3.0	† Start interlock	
Check tolerance	. 5.0	I	
cm3/1000s.	: 4.5	+	
		+ FUEL DELIVERY CHA	MRACTERISTICS
		+	

Aneroid pressure hPa Rated speed rpm	: - : 600
Del, quantity cm3/1000 strokes	: 52.0
Tolerance cm3/1000 strokes	: <del>+</del> 1.0
Check tolerance cm3/1000s.	: +- 3.0
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 850
cm3/1000 strokes Tolerance	: 57.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s.	: + 3.5
STARTING FUEL DEL	TVFRY
Rated speed rpm	: 100
rack travel mm Tolerance mm	: 15.20 : +- 0.20
Del. quantity	
cm3/1000 strokes Tolerance	: 83.0
cm3/1000 strokes Check tolerance	: +- 5.0
cin3/1000s.	: +- 8.0
LOW IDLE	
	: 350
Del. quantity cm3/1000 strokes	: 11.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000S. Spreed	: +- 3.0
Tolerance cm3/1000 strokes	: 2.5
Check tolerance cm3/1000s.	: 4.5
	• • • • • • • • • • • • • • • • • • • •

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.02.97 Test oil : ISO 4113

Combination No. : 0 400 876 255

Injection pump

Pump designation : PES6A90D410RS2293 EP type number : 0 410 896 031

Governor

Governer design. : RSV350...1300A0C783L

Governer no. : 0 420 232 409

Cust. part No.

Customer-spec. information Customer : MB-NFZ Motor : OM 352 A Power KW : 110.3

# TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.20
Tolerance mm : + 0.05
Check

neck

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.45
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance cm3/1000 strokes : 3.0	<b>†</b>
	CONTROL LEVER
Check tolerance cm3/1000s. : 4.5	control lever position degree : 117.0 tolerance degree : + 4.0
Rated speed rpm : 350 Del. quantity	RATED SPEED
cm3/1000 strokes : 11.0 Tolerance	rack travel mm : 1.00 Tolerance mm : +- 0.70
cm3/1000 strokes : +- 1.0 Check tolerance	Rated speed rpm : 1600
cm3/1000S. : + 3.0 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1445
cm3/1000 strokes : 2.5 Check tolerance	rack travel mm : 10.40 Rated speed rpm : 1350
cm3/1000s. : 4.5	Tolerance 1/min : + 5
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	+ LOW IDLE
GUIDE SLEEVE POSITION	+ Setting point w/out bumper spring
	Rated speed rpm : 350 rack travel mm : 7.40
control lever position degree : - 3	+ Tolerance mm : + 0.10
Rated speed rpm : 800	Testing:
Rack travel in mm : 0.65 Tolerance mm : + 0.35	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : +- 30
governor spring pre-tension	Rated speed rpm : 100
click setting x : 5.50	CRT mm min. : > 19.00
FULL LOAD DELIVERY AT FULL LOAD STOP	TORQUE CONTROL
Rated speed rpm : 1300 Aneroid pressure	Rated speed rpm : 1300
hPa : 700 Del. quantity	+ rack travel mm : 11.45 + Tolerance mm : +- 0.05
cm3/1000 strokes : 76.0 Tolerance	Rated speed rpm : 800
cm3/1000 strokes : + 0.5	+ rack travel mm : 11.50
Check tolerance cm3/1000s. : + 2.5	+ Tolerance mm : + 0.10
Spreed Tolerance	Rated speed rpm : 1050 rack travel mm : 11.50 Tolerance mm : + 0.10
cm3/1000 strokes : 3.0 Check tolerance	Tolerance mm : + 0.10
cm3/1000s. : 4.5	‡

ANEROID/ALTI	TUDE
COMPENSATOR	<b>TEST</b>

#### SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.55
Tolerance mm : + 0.05

Pressure hPa : Rated speed rpm : 500
rack travel mm : 10.65
Tolerance mm : + 0.05

#### **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 275
rack travel mm : 10.90
Tolerance mm : + 0.10

Fressure hPa : 390 rack travel mm : 11.45 Tolerance mm :  $\leftarrow$  0.05

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 700
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 63.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 3.5
Spreed
Check tolerance
cm3/1000s. : 5.5

Aneroid pressure

hPa : 700
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 68.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 3.5
Spreed

Check tolerance cm3/1000s. : 5.5

Aneroid pressure

hPa : Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 51.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 3.5

Spreed

Check tolerance

cm3/1000s. : 5.5

## STARTING FUEL DELIVERY

100 Rated speed rpm rack travel mm 15.30 : + 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes : +-5.0 Check tolerance cm3/1000s. : +-8.0

#### LOW IDLE

Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes :  $\leftarrow$  1.0 Check tolerance cm3/1000s.3.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 4.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.02.97 : ISO 4113

Combination No. : 0 400 876 257

Injection bumb

Pump designation : PES6A90D410RS2293Z EP type number : 0 410 896 037

Governor

Governer design. : RSV350...1300A0C1101

: -2L

Governer no. : 0 420 232 411

Cust. part No. :

Customer-spec. information Customer : MB-NFZ

Motor : OM 352 Power KW : 69.9

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : +-2.20 : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing Tolerance Phasing

: +- 0.50

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 8.25

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 45.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

C24

Tolerance cm3/1000 strokes	: 3.0	control lever position degree
Check tolerance cm3/1000s.	: 4.5	tolerance degree
		RATED SPEED
Rated speed rpm	: 350	rack travel mm Tolerance mm
Del. quantity cm3/1000 strokes	: 11.0	Rated speed rpm
Tolerance cm3/1000 strokes	: +- 1.0	rack travel mm Rated speed rpm
Check tolerance cm3/1000s.	: +- 3.0	rack travel mm
Spreed Tolerance	•	+ Rated speed rpm + Tolerance 1/min
cm3/1000 strokes	: 2.0	‡
(B) SETTING OF IN	JECTION PUMP	+
WITH GOVERNOR		+ LOW IDLE
		Setting point w/
GUIDE SLEEVE POSI	TION	Rated speed rpm rack travel mm
		Tolerance mm
control lever position degree	: - 3	+ Testing:
Rated speed rpm	: 800	+
Rack travel in mm	: 0.50	+ rack travel mm + Rated speed rpm
Tolerance mm	: + 0.20	Tolerance 1/min
governor spring		Rated speed rpm
pre-tension click setting x	: 4.75	CRT cam min.
FULL LOAD DELIVER	Y AT FULL LOAD STOP	TORQUE CONTROL
Rated speed rpm	: 1300	Rated speed rpin rack travel mm
Aneroid pressure	: -	Tolerance mm
Del. quantity cm3/1000 strokes	: 45.0	Rated speed rpm
Tolerance cm3/1000 strokes	: + 0.5	rack travel mm Tolerance mm
Check tolerance cm3/1000s.	: <b>←</b> 2.5	Rated speed rpm
Spreed Tolerance		+ rack travel mm + Tolerance mm
cm3/1000 strokes	: 3.0	+
Check tolerance cm3/1000s.	: 4.5	+ Rated speed rpm + rack travel mm
y		Tolerance mm
CONTROL LEVER		Start interlock
<del>-</del> - · · <del>-</del> · ·		•

control lever position degree tolerance degree	: 113.0 : + 4.0
RATED SPEED	
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1500
rack travel mm Rated speed rpm	: 4.00 : 1405
rack travel mm Rated speed rpm Tolerance 1/min	
LOW IDLE	
Setting point w/o	ut bumper spring
Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.70 : + 0.10
Testing:	
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 480 : + 30
Rated speed rpm	: 100
CRT am min.	: > 19.50
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1300 : 8.25 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 9.15 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 900 : 9.00 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1075 : 8.45 : + 0.15

#### FUEL DELIVERY CHARACTERISTICS

Aneroid	ATHOOGITA
THE COLO	P( 62301 6

hPa 500 Rated speed rpm

Del. quantity cm3/1000 strokes : 40.5

Tolerance

cm3/1000 strokes : +-1.5

Check tolerance

cm3/1000s. 4.0

## Anaroid pressure

hPa 900 Rated speed rpm Del. quantity cm3/1000 strokes : 49.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.5

## STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes : +-5.0

Check tolerance

cm3/1000s. 8.0 : +-

#### LOW IDLE

Rated speed rpm 350

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s. 3.0

Spreed

Tolerance

cm3/1000 strokes : 2.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.02.97 : ISO 4113

Combination No. : 0 400 876 260

Injection pump

Pump designation : PESÓA900410RS2293 EP type number : 0 410 896 031

Governor

Governer design. : RSV350...1300A0C1105

Governer no. : 0 420 232 413

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM 352 Power KW : 91.9 : OM 352 A

#### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 419 992 0198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

2.0 x inside diameter: x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 2.20 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: +- 0.50 Tolerance

Check

tolerance \*NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 10.05 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 67.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s. : **←** 2.5

Spreed

Tolerance	+
cm3/1000 strokes : 3.0	CONTROL LEVER
Check tolerance cm3/1000s. : 4.5	control lever position degree : 115.0 tolerance degree : +- 4.0
Rated speed rpm : 350	RATED SPEED
Del. quantity cm3/1000 strokes : 11.0	rack travel mm : 1.00
Tolerance cm3/1000 strokes : +- 1.0	Tolerance mm : +- 0.70 Rated speed rpm : 1540
Check tolerance cm3/1000s. : +- 3.0 Spreed	rack travel mm : 4.00 Rated speed rpm : 1425
Tolerance cm3/1000 strokes : 2.5	Rated speed (piii . 1725
Check tolerance cm3/1000s. : 4.5	
	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Setting point w/out bumper spring
	Rated speed rpm : 350
GUIDE SLEEVE TRAVEL	rack travel mm : 6.90 Tolerance mm : +- 0.10
Dimension a mm : 0.40	Testing:
GUIDE SLEEVE POSITION	rack travel mm : 2.00 Rated speed rpm : 490
Rated speed rpm : 800	Tolerance 1/min : +- 30
Rack travel in mm : 0.65 Tolerance mm : +- 0.35	Rated speed rpm : 100  CRT mm min. :> 19.00
governor spring pre-tension	TORQUE CONTROL
click setting x : 5.00	Rated speed rpm : 1300
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 10.05 Tolerance mm : + 0.05
Rated speed rpm : 1300	Rated speed rpm : 500
Aneroid pressure hPa : -	rack travel mm : 10.40 Tolerance mm : + 0.10
Del. quantity cm3/1000 strokes : 67.5 Tolerance	Rated speed rpm : 750 rack travel mm : 10.35
cm3/1000 strokes : + 0.5 Check tolerance	Tolerance mm : + 0.05
cm3/1000s. : +- 2.5 Spreed	Rated speed rpm : 1140 rack travel mm : 10.05
Tolerance cm3/1000 strokes : 3.0	Tolerance mm : + 0.05
Check tolerance cm3/1000s. : 4.5	Start interlock
	-4.

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 850 Rated speed rpm Del. quantity

cm3/1000 strokes : 61.5

Tolerance

cm3/1000 strokes 1.5

Check tolerance

cm3/1000s. 4.0

## STARTING FUEL DELIVERY

Rated speed rpm 100 14.50 rack travel mm : + 0.20Tolerance mm Del. quantity

cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes 5.0

Check tolerance

cm3/1000s. 8.0

#### LOW IDLE

350 Rated speed rpm Del. quantity 11.0 cm3/1000 strokes Tolerance cm3/1000 strokes 1.0 Check tolerance cm3/1000S. 3.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance

cm3/1000s. 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 08,10,96 : ISO 4113

Combination No. : 0 400 876 261

Injection pump

Pump designation : PES6A90D410RS2293

EP type number : 0 410 896 031

Governor

Governer design. : RSV350...750A0C741L

Governer no.

: 0 420 232 414

Cust. part No.

Customer-spec. information : MB-NFZ Customer : OM 352 A Motor

Power KW

: 62.5

#### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C Tolerance °C 2.0

: 1 419 922 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar

: + 1.5 Tolerance bar

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 2.20 Tolerance mm : ← 0.05

Check

tolerance mm : + - 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.95

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : +-1.0

3.0

Check tolerance

: +cm3/1000s.

Spreed

		1			
Tolerance cm3/1000 strokes	: 3.0	<del>-</del> +	control lever position degree tolerance degree		81.0 4.0
Check tolerance cm3/1000s.	: 7.0	Ŧ	ASSEMBLY GOVERNOR	SETTI	NG
Rated speed rpm	: 350	† †	Rated speed rpm rack travel mm	:	750 9.90
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: <del>+-</del> 0.10	+	Rated speed rpm Tolerance 1/min rack travel mm		792 4 4.00
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		. +	rack travel mm Tolerance mm Rated speed rpm	: : +- :	1.00 0.70 820
Spreed Tolerance cm3/1000 strokes Check tolerance	: 4.5	†	Rated speed rpm rack travel mm	:	751 9.90
cm3/1000s.	: 7.0	<u> </u>	Rated speed rpm Tolerance 1/min rack travel mm	: : +-	793 4 4.00
(B) SETTING OF IN. WITH GOVERNOR	TECTION PUMP	+++++++++++++++++++++++++++++++++++++++	rack travel mm Tolerance mm Rated speed rpm	: : +-	1.00 0.70 820
GUIDE SLEEVE POSIT	: 800	+	Rated speed rpm rack travel mm	: :	752 9.90
Rack travel in mm Tolerance mm	: 0.50 : +- 0.20	+++	Rated speed rpm Tolerance 1/min rack travel mm	: : +-	794 4 4.00
Rated speed rps Aneroid pressult	AT FULL LOAD STOP	++++	rack travel mm Tolerance mm Rated speed rpm	: +-	1.00 0.70 820
hPa Del. quantity cm3/1000 strokes Tolerance	. 64.0	‡	Rated speed rpm rack travel mm	:	753 9.90
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 3.0	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: : +-	795 4 4.00
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: 3.0 : 7.0	† + + +	rack travel mm Tolerance mm Rated speed rpm	: +-	1.00 0.70 820
CONTROL LEVER		†	Rated speed rpm rack travel mm	:	754 9.90
COVINCE LEVER		Ţ	Rated speed rpm	:	796

Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 1.00
Tolerance mm	: +- 0.70
Rated speed rpm	: 820
Rated speed rpm	: 755
rack travel mm	: 9.90
Rated speed rpm	: 797
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: + 0.70
Tolerance mm	: + 0.70
Rated speed rpm	: 820
LOW IDLE	
control lever position degree tolerance degree	: 69.0 : + 4.0
Testing:	
Rated speed rpm	: 350
rack travel mm	: 8.00
Tolerance mm	: + 0.10
rack travel mm	: 2.00
Rated speed rpm	: 400
Tolerance 1/min	: + 30
SET IDLE AUXILIARY	Y SPRING
Rated speed rpm	: 400
rack travel mm	: 2.00
TORQUE CONTROL	
Rated speed rpm	: 700
rack travel mm	: 10.95
Tolerance mm	: ← 0.05
Start interlock	

Del. quantity cm3/1000 strokes	:	83.0
Tolerance cm3/1000 strokes	: +-	7.5
Check tolerance cm3/1000s.	; +-	10.0
LOW IDLE		
Rated speed rpm Del. quantity	:	350
cm3/1000 strokes Tolerance	:	21.0
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s.	: +-	4.0
Spreed Tolerance cm3/1000 strokes	:	4.5
Check tolerance	•	
cm3/1000s.	:	7.0

End of test specification sheet

Rated speed rpm : 100

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18,02,97 Edition : ISO 4113 Test oil

Combination No. : 0 400 876 264

Injection pump

Pump designation : PES6A90D410RS2293Z EP type number : 0 410 896 037

Governor

Governer design. : RSV350...1400A0C745L

: 0 420 232 416 Governer no.

Cust. part No.

Customer-spec. information Customer : MB-NFZ : OM 352 A Motor Power KW : 123.0

#### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 : +- 1.5 Tolerance bar

: 1 680 750 014 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 2.20 Tolerance mm : + 0.05

Check

tolerance mm : + - 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: + - 0.50Tolerance

Check

tolerance \*NW : **←** 0.75

BASIC SETTING

Del. quantity 76.0

cm3/1000 strokes :

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

2.5 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.

4.5

	+ rack travel mm : 10.90
Rated speed rpm : 350	Rated speed rpm : 1425 Tolerance 1/min : +- 5
Rack travel in mm: 7.40	+
Tolerance mm : + 0.10	rack travel mm : 4.00
Del. quantity	Rated speed rpm : 1525
cm3/1000 strokes : 12.0	Tolerance 1/min : + 15
Tolerance	†
cm3/1000 strokes : +- 3.0	+ rack travel mm : 1.00 + Tolerance mm : + 0.70
Check tolerance : + 5.0	Tolerance mm : + 0.70 Rated speed rpm : 1700
Spreed	T Rated speed rpill . 1700
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : 2.0	Rated speed rpm : 1545
Check tolerance	+
cm3/1000s. : 4.0	+
	†
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
	t control lever
	position degree : 33.0
GUIDE SLEEVE POSITION	tolerance degree : + 4.0
GOIDE DEEL OF LOOITION	totol unite degree 4.5
control lever	Setting point w/out bumper spring
position degree : - 3	Rated speed rpm : 350
Rated speed rpm : 800	
	rack travel mm : 7.90 Tolerance mm : +- 0.10
Rack travel in mm: 0.65	+
Tolerance mm : + 0.35	Testing:
•	750
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 350 rack travel mm : 7.40
FULL LUAD DELIVERY AT FULL LUAD STOP	
	+ Interance mm : +- 11 711
Rated speed rpm : 1380	Tolerance mm : + 0.10
Rated speed rpm : 1380	+
Rated speed rpm : 1380 Aneroid pressure hPa : -	+
Aneroid pressure hPa : - Del. quantity	rack travel mm : 2.00
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	rack travel mm : 2.00 Rated speed rpm : 600
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30 Rated speed rpm : 100
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30 Rated speed rpm : 100
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30 Rated speed rpm : 100
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30 Rated speed rpm : 100
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0  Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0  Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0  Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0  Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 4.5  CONTROL LEVER  control lever	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  Start interlock  STARTING FUEL DELIVERY  Rated speed rpm : 100
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 4.5  CONTROL LEVER  control lever position degree : 66.0	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  Start interlock  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 4.5  CONTROL LEVER  control lever	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : +- 30  Rated speed rpm : 100  CRT mm min. : > 19.00  Start interlock  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 83.0
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 4.5  CONTROL LEVER  control lever position degree : 66.0	rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  Start interlock  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity

Check tolerance		
cm3/1000s.	: +-	8.0

# LOW IDLE

Rated speed rpm	:	350	
Del. quantity cm3/1000 strokes	:	12.0	
Tolerance			
cm3/1000 strokes	: +-	3.0	
Check tolerance		F 0	
cm3/1000s.	: +-	5.0	
Spreed Tolerance			
cm3/1000 strokes	:	2.0	
Check tolerance			
cm3/1000s.	:	4.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18.02.97 Edition : ISO 4113 Test oil

Combination No. : 9 400 030 749

Injection pump

Pump designation : PES4A95D320/3RS2880

EP type number : 9 410 037 214

Governor

Governer design. : RSV475...1050A0C864R

: F 002 A20 200 Governer no.

Cust. part No. : DEP: 3930155

Customer-spec. information

: CUMMINS-4BTA-3.9 Motor

Power KW : 68.5

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

: 2 417 413 093 Overflow valve

2.0 Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 1.5 Tolerance bar

: 1 680 750 014 Test Lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm Tolerance mm : +- 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

: ← 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 6.50 Tolerance : + 0.10

Check

tolerance \*NW : + 0.29

Barrel no.

#### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 12.50 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 102.5

+	Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 102.5 Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 3.0	cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance +	Check tolerance
cm3/1000 strokes : 4.0 +	cm3/1000s. : 6.5
Check tolerance cm3/1000S. : 6.5	
	CONTROL LEVER
+	control lever
Rated speed rpm : 475	position degree : 102.0 tolerance degree : +- 4.0
Rack travel in mm: 6.15	_
Tolerance mm : + 0.10	RATED SPEED rack travel mm : 11.50
Del. quantity + cm3/1000 strokes : 18.5 +	rack travel mm : 11.50 Rated speed rpm : 1110
Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0 +	
Check tolerance + 4.5 +	rack travel mm : 4.00 Rated speed rpm : 1225
Spreed	Tolerance 1/min : + 5
Tolerance	
cm3/1000 strokes : 6.0 + Check tolerance +	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. : 8.0	Rated speed rpm : 1350
+	
(B) SETTING OF INJECTION PUMP +	rack travel mm : 4.00 Rated speed rpm : 1225
WITH GOVERNOR	rated speed (piii . 122)
+	
<u> </u>	
GUIDE SLEEVE POSITION	LOW IDLE
İ	
control lever	control lever
position degree : -3 +	position degree : 84.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50	Control lever difference
Tolerance mm : + 0.20	Grad : 18.0 tolerance degree : +- 6.0
governor spring	tolerance degree : +- 6.0
pre-tension +	Setting point w/out bumper spring
click setting $x$ : 4.25	Rated speed rpm : 475
	rack travel mm : 5.65
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 1050	Testing:
Aneroid pressure + hPa : 715 +	Rated speed rpm : 475
+	rack travel mm : 6.15

Tolerance mm : + 0.10 100 Rated speed rpm CRT mm min. : > 19.00 TORQUE CONTROL Rated speed rpm 1050 rack travel mm 12.50 Tolerance mm : +- 0.05 Rated speed rpm 600 13.90 rack travel mm : + 0.20Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 715 Pressure hPa Pressure hPa 500 Rated speed rpm 11.00 rack travel mm : **←** 0.20 Tolerance mm **MEASUREMENT** Rated speed rpm 500 Pressure hPa 540 : rack travel mm 13.10 Tolerance mm : +- 0.20 400 Pressure hPa 12.40 rack travel mm Tolerance mm : + 0.20 Start interlock FUEL DELIVERY CHARACTERISTICS Aneroid pressure 715 hPa 600 Rated speed rpm Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance

: +-

4.0

Aneroid pressure Rated speed rpm 500 Del. quantity cm3/1000 strokes : 72.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. 3.0 STARTING FUEL DELIVERY 100 Rated speed rpm rack travel mm : 20.50 Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 121.5 Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : +- 15.0 LOW IDLE Rated speed rpm 475 Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 : +-Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

End of test specification sheet

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18.02.97 Edition Test oil : 180 4113

Combination No. : 9 400 030 751

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1050A0C866R

Governer no. : F 002 A20 202

Cust. part No. : 393 0158

Customer-spec. information Customer : CUMMINS Motor : 6BT : 94.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05 Check tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-: 4

: 0-60-120-180-240
Tolerance : +- 0 = 0

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : +- 0.29

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.00 Tolerance mm : +- 0.05

Del. quantity - cm3/1000 strokes : 86.1	Aneroid pressure hPa : 800 Del. quantity
Tolerance - cm3/1000 strokes : + 1.0	cm3/1000 strokes : 86.1
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 3.0	cm3/1000s. : + 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance - cm3/1000 strokes : 4.0 -	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CONTROL LEVER
Rated speed rpm : 475	control lever position degree : 102.0 tolerance degree : +- 4.0
Rack travel in mm : 6.60 -	t
Tolerance mm : +- 0.10 Del. quantity	RATED SPEED : 11.00
cm3/1000 strokes : 18.6	Rated speed rpm : 1095
Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : +- 2.0	7 00
Check tolerance - cm3/1000s. : + 4.5	rack travel mm : 4.00 Rated speed rpm : 1190
Spreed	Tolerance 1/min : +- 15
Tolerance	
cm3/1000 strokes : 6.0	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 8.0	Rated speed rpm : 1280
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1200
GUIDE SLEEVE POSITION	LOW IDLE
control lever	- control lever
position degree : - 3	position degree : 84.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm : 0.50	Control lever difference
Tolerance mm : + 0.20	Grad : 18.0
	tolerance degree : +- 4.0
governor spring - pre-tension -	Setting point w/out bumper spring
click setting x : 4.00	
-	- Rated speed rpm : 475
EUL LOAD DELTUEDY AT EUL LOAD CTOD	rack travet mm : 6.10 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 1050	Testing:

Rated speed rpm	: 475	+	Del. quantity	
rack travel mm	: 6.60	1	cm3/1000 strokes	: 97.0
Tolerance mm	: + 0.10	1	Tolerance	
10001 01100 11111		1	cm3/1000 strokes	: + 2.0
rack travel mm	• 2.00	1	Check tolerance	
Rated speed rpm		$\mathbf{I}$	cm3/1000s.	: +- 4.0
Tolerance 1/min		I	tilis/ 10000.	• • •••
rocerance mann	. 4 50	T	Aneroid pressure	
Rated speed rpm	: 100	T	hPa	
Rated Speed Phil	. 100	T	Rated speed rpm	650
CRT mm min.	: > 19.50	I	Del. quantity	. 000
CRI ma miri.	. > 17.30	Ι	cm3/1000 strokes	: 84.7
		T	Tolerance	. 04.1
TORQUE CONTROL			cm3/1000 strokes	· +- 10
TORGOE CONTROL		T	Check tolerance	
Dated speed page	: 1050	I	cm3/1000S.	: <del>←</del> 3.0
Rated speed rpm rack travel mm		· T	CIII 7 10003.	5.0
Talanana Talanana		T		
Tolerance mm	: 0.05	T		
Datasi annual ann	. 200	†	STARTING FUEL DEL	TVEDV
Rated speed rpm	: 12.60	T	ALMINITING FOEL DEF	TAF1/1
rack travel mm		Ť	Rated speed rpm	: 100
Tolerance mm	: + 0.10	†	rack travel mm	
		†		
ANICOGEN /AL TETLICE			Tolerance mm	0.50
ANEROID/ALTITUDE		†	Del. quantity	. 424.0
COMPENSATOR TEST		†	cm3/1000 strokes	: 121.0
		†	Tolerance	40.0
		†	cm3/1000 strokes	: +- 10.0
SETTING		+	Check tolerance	45.0
Book and the Control	/ PO	†	cm3/1000s.	: + 15.0
Rated speed rpm		†		
Pressure hPa	: 800	†		
		†		
Pressure hPa		†	LOU TOLE	
Rated speed rpm		†	LOW IDLE	
rack travel mm	: 11.75	†	mand	. /75
Tolerance mm	: <b>←</b> 0.10	†	Rated speed rpm	: 4/5
		†	Del. quantity	. 40.7
MEASUREMENT		†	cm3/1000 strokes	: 18.6
	450	+	Tolerance	
Rated speed rpm	: 650	†	cm3/1000 strokes	: <del>+-</del> 2.0
		†	Check tolerance	
Pressure hPa	: 550	+	cm3/1000s.	: +- 4.5
rack travel mm	: 12.50	+	Spreed	
Tolerance mm	: <b>←</b> 0.20	+	Tolerance	
		+	cm3/1000 strokes	: 6.0
Pressure hPa	: 475	+	Check tolerance	
rack travel mm	: 12.15	+	cm3/1000S.	: 8.0
Tolerance mm	: <del></del> 0.20	+		
		+		
Start interlock		+		
		+		
		†	• د عمد است	eduladou - 1
FUEL DELIVERY CHA	RACTERISTICS	‡	End of test speci	rication sheet
		+		
Aneroid pressure	000	†		
hPa	: 800	†		
Rated speed rpm	: 800	†		
		+		

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.02.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 009

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1050A0C886R

Governer no. : F 002 A20 211

Cust. part No. : 393 0159

Customer—spec. information
Customer : CUMMINS
Motor : 6BT

Power KW : 100.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C . 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 98.2

\_\_\_\_\_

Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : + 3.0
Spreed
Tolerance cm3/1000 strokes : 4.0
Check tolerance cm3/1000s. : 6.0
Rated speed rpm : 475
Rack travel in mm: 5.05 Tolerance mm: + 0.10
Del. quantity cm3/1000 strokes : 18.5
Tolerance cm3/1000 strokes : + 2.0
Check tolerance cm3/1000S. : +- 4.5 Spreed
Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 8.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR
GUIDE SLEEVE POSITION
control lever position degree : FREE Rated speed rpm : 800
Rack travel in mm : 0.50 Tolerance mm : + 0.20
governor spring pre-tension click setting x : 2.75
FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 1050 Aneroid pressure
hPa : 900 Del. quantity
cm3/1000 strokes : 98.2

Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 3.0 : 4.0 : 6.0
CONTROL LEVER	
control lever position degree tolerance degree	: 100.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 10.25 : 1115 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.50 : 1170 : + 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1275
rack travel mm Rated speed rpm	: 4.50 : 1170
LOW IDLE	
control lever position degree tolerance degree	: 82.0 : + 4.0

control lever
position degree : 82.0
tolerance degree : + 4.0

Control lever difference
Grad : 18.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475

Rated speed rpm : 475 rack travel mm : 4.55 Tolerance mm :  $\leftarrow$  0.10

Testing:

Rated speed rpm : 475 rack travel mm : 5.05 Tolerance mm : +- 0.10

rack travel mm	: 2.00
Rated speed rpm Tolerance 1/min	: 550 : <del></del> 30
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 800 : 11.80 : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 650 : 900
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	650 9.30 + 0.20
MEASUREMENT	
Rated speed rpm	: 650
Pressure hPa rack travel mm Tolerance mm	: 485 : 11.00 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 310 : 10.10 : + 0.20
Start interlock	
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 900 : 800
Del. quantity cm3/1000 strokes	: 106.2

Check tolerance cm3/1000s.	: +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 650 : 73.8 : + 1.0 : + 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
LOW IDLE	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 475 : 18.5 : + 2.0 : + 4.5 : 6.0 : 8.0

End of test specification sheet

Tolerance cm3/1000 strokes : +- 2.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18.02.97 Edition Test oil : ISO 4113

Combination No. : F 002 AGZ 010

Injection pump

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1050A0C887R

Governer no. : F 002 A20 209

Cust. part No. : 3930160

Customer-spec. information Customer : CUMMINS Motor : 6BT Power KW : 107.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05 Check tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance : + 0.10 Check

tolerance \*NW : + 0.29

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 12.20 : +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 101.8

Tolerance	t 10	Tolerance
cm3/1000 strokes	: <b>←</b> 1.0 †	cm3/1000 strokes Check tole: nce
Check tolerance		cm3/1000s.
cm3/1000s.	: + 3.0 I	Spreed
CIID/ 10003.	· - 3.0	Tolerance
Spreed		cm3/1000 strokes
opi cca	1	Check tolerance
Tolerance	1	cm3/1000s.
cm3/1000 strokes	: 4.0	
	+	
Check tolerance	+	
cm3/1000s.	: 6.5	CONTROL LEVER
	+	
	†	control lever
Dalan	, /3E	position degree
Rated speed rpm	: 475 †	tolerance degree
Rack travel in mm	1. 545	RATED SPEED
Tolerance mm	1: + 0.10 I	rack travel mm
Del. quantity	I	Rated speed rpm
cm3/1000 strokes	: 18.8	Tolerance 1/min
Tolerance	·	TOTAL GIRCE TARTIT
cm3/1000 strokes	: + 2.0	rack travel mm
Check tolerance	1	Rated speed rpm
cm3/1000s.	: + 4.5	Tolerance 1/min
Spreed	+	
Tolerance	+	rack travel mm
cm3/1000 strokes	: 6.0	Tolerance mm
Check tolerance	+	Rated speed rpm
m3/1000s.	: 8.0	•
	+	rack travel mm
<b>4</b>	+	Rated speed rpm
(B) SETTING OF IN	HECTION PUMP +	
WITH GOVERNOR	†	
	Ĭ	<del></del>
		LOW IDLE
GUIDE SLEEVE POSI	TION +	- · · · · - <del>- ·</del>
	+	
	+	control lever
control lever	+	position degree
position degree	: FREE +	tolerance degree
Rated speed rpm	: 800 +	6 I I 14 # 14 # 1
S. 1 A	†	Control lever diff
Rack travel in mm		Grad
Tolerance mm	: <b>+</b> 0.20 +	tolerance degree
tovannon onsine	†	Setting point w/ou
governor spring pre-tension	1	secong point w/ou
click setting x	: 4.50	Rated speed rpm
CLICK SECLING X	· 4.56	rack travel mm
	I	Tolerance mm
FULL LOAD DELTVER	Y AT FULL LOAD STOP	TO COT GITTO THE
APP FAUN APPTAPI	+	Testing:
Rated speed rpm	: 1050	
Aneroid pressure	į.	Rated speed rpm
hPa	: 800	rack travel mm
Del. quantity	+	Tolerance mm
cm3/1000 strokes	: 101.8	
CIRD/ 1000 SCI OKES	. 101.0	

: +- 1.0

: +- 3.0

: 4.0

: 6.5

: 105.0 : + 4.0

rack travel mm Rated speed rpm Tolerance 1/min		
Rated speed rpm	: 100	
CRT mm min.	: > 19.50	
TORQUE CONTROL		
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.20 : ← 0.05	
Rated speed rpm rack travel mm Tolerance mm	: 800 : 12.70 : ← 0.10	
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa	: 500 : 800	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.70 : + 0.10	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 700 : 12.25 : ← 0.20	
Pressure hPa rack travel mm Tolerance mm	: 560 : 11.90 : + 0.20	
Start interlock		
FUEL DELIVERY CHARACTERISTICS		
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes		
CIND/ TOUG STROKES	2.0	

Check tolerance cm3/1000s.	: +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500
	: 82.9
	: +- 1.0
	: +- 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 20.50 : + 0.50
	: 120.5
	: + 10.0
	: + 15.0
LOW IDLE	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 475
	: 18.8
	: +- 2.0
	: <del>←</del> 4.5
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.02.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 011

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A0C888R

Governer no. : F 002 A20 212

Cust. part No. : 3930164

Customer—spec. information Customer : CUMMINS Motor : 6BTA Power KW : 124.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50

Tolerance : + 0.10

Check

tolerance \*NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

Tolerance cm3/1000 strokes	: +- 1.0	Tolerance
Check tolerance cm3/1000s.	: +- 3.0	_
Spreed		_ + Tolerance cm3/1000
Tolerance cm3/1000 strokes	: 4.0	+ Check tole + cm3/1000s
Check tolerance cm3/1000s.	: 6.5	- †CONTROL LI
		_ control le
Rated speed rpm	: 475	position of tolerance
Rack travel in mm Tolerance mm	: 5.95 : + 0.10	RATED SPE
Del. quantity cm3/1000 strokes	: 20.6	+ Rated spec + Tolerance
Tolerance cm3/1000 strokes Check tolerance	: + 2.0	rack trave
cm3/1000s. Spreed	: <del>+</del> 4.5	Tolerance
Tolerance cm3/1000 strokes	: 6.0	rack trave
Check tolerance cm3/1000s.	: 8.0	Rated spec
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	Rated spec
GUIDE SLEEVE POSIT	TION	LOW IDLE
control lever position degree	: FREE	control le
Rated speed rpm	: 800	- Control le
Rack travel in mm Tolerance mm	: 0.50 : + 0.20	Grad tolerance
governor spring pre-tension		Setting po
click setting x	: 1.50	Rated spee rack trave Tolerance
FULL LOAD DELIVERY	AT FULL LOAD STOP	Testing:
Rated speed rpm Aneroid pressure	: 1050	+ Rated spec
hPa Del. quantity	: 1200	+ rack trave + Tolerance
cm3/1000 strokes	: 116.0	+

Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: + 1.0 : + 3.0 : 4.0 : 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 95.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.70 : 1095 : ← 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1165 : ← 15
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1250
rack travel mm Rated speed rpm	: 4.00 : 1170
LOW IDLE	
control lever position degree tolerance degree	: 77.0 : + 4.0

# control lever position degree : 77.0 tolerance degree : + 4.0 Control lever difference Grad : 18.0 tolerance degree : + 6.0 Setting point w/out bumper spring Rated speed rpm : 475 rack travel mm : 5.45 Tolerance mm : + 0.10

dated speed rpm : 475 rack travel mm : 5.95 Tolerance mm : + 0.10

rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 540 : + 30
Rated speed rpm	: 100
CRT mm min.	; > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 750
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1200
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.60 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 550 : 12.10 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 400 : 11.10 : ← 0.20
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa	: 1200
Rated speed rpm Del. quantity	: 750
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	: + 2.0 : + 4.0
cm3/1000s.	: T- 4.U

Aneroid pressure hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 81.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. 3.0 STARTING FUEL DELIVERY 100 Rated speed rpm rack travel mm : 20.50 Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 121.5 Tolerance cm3/1000 strokes : + 10.0Check tolerance cm3/1000s. : + 15.0 LOW IDLE Rated speed rpm 475 Del. quantity cm3/1000 strokes : 20.6 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 18.02.97 Edition : ISO 4113 Test oil

Combination No. : F 002 AOZ 012

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1000A0C889R

Governer no. : F 002 A20 210

Cust. part No. : 3930162

Customer-spec. information

: CUMMINS Customer

: 68TA-160/2000 Motor

Power KW : 119.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance \*C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 : **←** 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 2.85 : + 0.05Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance : +- 0.10

Check

tolerance \*NW : + 0.29

Barrel no. 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.30

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 116.9

Tolerance cm3/1000 strokes : +- 1.0	+ Tolerance + cm3/1000 strokes : +- 1.0 + Check tolerance
Check tolerance cm3/1000s. : +- 3.0	- cm3/1000s. : +- 3.0 - Spreed - Tolerance
Spreed	- cm3/1000 strokes : 4.0 - Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CONTROL LEVER
Rated speed rpm : 475	control lever position degree : 94.0 tolerance degree : +- 4.0
Rack travel in mm : 5.90 Tolerance mm : + 0.10 Del. quantity	RATED SPEED  rack travel mm : 12.30 Rated speed rpm : 1050
cm3/1000 strokes : 23.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance	Tolerance 1/min : +- 5  rack travel mm : 4.00  Rated speed rpm : 1130
cm3/1000s. : + 4.5 Spreed	Tolerance 1/min : +- 15
Tolerance cm3/1000 strokes : 6.0 Check tolerance	+ rack travel mm : 0.85 + Tolerance mm : + 0.55 + Rated speed rpm : 1200
cm3/1000s. : 8.0	rack travel mm : 4.00 Rated speed rpm : 1135
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Rated speed rpm : 1133
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 74.0 tolerance degree : + 4.0
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	+ Control lever difference + Grad : 20.0 + tolerance degree : + 6.0
governor spring pre-tension	Setting point w/out bumper spring
click setting x : 2.25	Rated speed rpm : 475 rack travel mm : 5.10 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Testing:
Rated speed rpm : 1000 Aneroid pressure hPa : 850 Del. quantity cm3/1000 strokes : 116.9	Rated speed rpm : 475 rack travel mm : 5.90 Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 540
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 13.30 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 850

Pressure hPa : Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 550 rack travel mm : 12.50 Tolerance mm : + 0.20

Pressure hPa : 350 rack travel mm : 11.45 Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity

cm3/1000 strokes : 75.6

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 122.5

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 15.0

LOW IDLE

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 23.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : +- 4.5

Spreed

Tolerance cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.02.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 014

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1000A0C891R

Governer no. : F 002 A20 214

Cust. part No. : 3930161

Customer—spec. information
Customer : CUMMINS
Motor : ARTA-1/7 HE

Motor : 6BTA-147 HP

Power KW : 106.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. \*C : 40 Tolerance \*C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance : + 0.10

Check

tolerance \*NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.60 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 112.3

Tolerance	+	Tolerance
cm3/1000 strokes :	+ 1.0	cm3/1000 strokes : +- 1.0
	+	Check tolerance
Check tolerance	-	cm3/1000s. : +- 3.0
cm3/1000s. :	+ 3.0 ↓	Spreed
-	1	Tolerance
Spreed		cm3/1000 strokes : 4.0
	1	Check tolerance
Tolerance	1	cm3/1000s. : 6.5
cm3/1000 strokes :	4.0	
	1	
Check tolerance	-	
cm3/1000s. :	6.5	CONTROL LEVER
	+	
	+	control lever
	. +	position degree : 92.0
Rated speed rpm :	475	tolerance degree : +- 4.0
	+	
Rack travel in mm:		RATED SPEED
	+- 0.10 +	rack travel mm : 11.60
Del. quantity	+	Rated speed rpm : 1065
cm3/1000 strokes :	17.6	Tolerance 1/min : + 5
Tolerance	+	
cm3/1000 strokes :	<b>←</b> 2.0 <b>+</b>	rack travel mm : 4.00
Check tolerance	+	Rated speed rpm : 1130
cm3/1000s. :	+ 4.5 +	Tolerance 1/min : +- 5
Spreed	+	
Tolerance	+	rack travel mm : 0.85
cm3/1000 strokes :	6.0	Tolerance mm : + 0.55
Check tolerance	+	Rated speed rpm : 1250
cm3/1000s. :	8.0	
	+	rack travel mm : 4.00
	· †	Rated speed rpm : 1130
(B) SETTING OF INJE	CTION PUMP +	
WITH GOVERNOR	†	
	†	
	†	LOULTNIC
GUIDE SLEEVE POSITION	001	LOW IDLE
GOIDE SEEENE LOSIII	I	
	I	control lever
control lever	I	position degree : 75.0
	FREE	tolerance degree : +- 4.0
Rated speed rpm :	=	
Matta opeca (Mil	1	Control lever difference
Rack travel in mm :	0.50	Grad : 17.0
	+ 0.20	tolerance degree : +- 6.0
	1	
governor spring	1	Setting point w/out bumper spring
pre-tension	<u> </u>	,
click setting x :	1.50	Rated speed rpm : 475
	1	rack travel mm : 4.70
<del></del>		Tolerance mm : $+$ 0.10
FULL LOAD DELIVERY	AT FULL LOAD STOP	
	1	Testing:
Rated speed rpm :	1000	-
Aneroid pressure	+	Rated speed rpm : 475
hPa :	1200	rack travel mm : 5.20
Del. quantity	+	Tolerance mm : +- 0.10
	112.3	
	•	

2.00 rack travel mm : 540 Rated speed rpm : : +-Tolerance 1/min 30

Rated speed rpm 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 12.60 Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa 1200

Pressure hPa 500 Rated speed rpm : 10.40 rack travel mm : + 0.10Tolerance mm

**MEASUREMENT** 

500 Rated speed rpm

600 Pressure hPa rack travel mm 12.10 : + 0.20Tolerance mm

475 Pressure hPa 11.40 rack travel mm : + 0.20Tolerance mm

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 500 Rated speed rpm :

Del. quantity

83.9 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

: +-3.0 cm3/1000s.

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm : 20.50 Tolerance mm : ← 0.50 Del. quantity

cm3/1000 strokes : 121.5 Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 15.0

LOW IDLE

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 17.6

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. 4.5

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

8.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.02.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 047

Injection pump

Pump designation : PES6A100b320/3RS3513

EP type number : F 002 A10 002

Governor

Governer design. : RSV450...750A4C926R

Governer no. : F 002 A20 234

Cust. part No. : 3931254

Customer-spec. information Customer : CDC
Motor : 6CT 8.3
Power KW : 133.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : ← 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Toterance bar : + 1.0

Prestroke mm : 2.55 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.75 Tolerance  $: \leftarrow 0.10$ 

Check

tolerance \*NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 13.15
Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 159.0	+ Aneroid pressure + hPa : -
Tolerance cm3/1000 strokes : +- 1.0	+ Del. quantity + cm3/1000 strokes : 159.0 + Tolerance
Check tolerance	+ cm3/1000 strokes : + 1.0 + Check tolerance
cm3/1000s. : +- 3.0	+ cm3/1000s. : + 3.0 + Spreed
Spreed	+ Tolerance + cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	
	+ CONTROL LEVER
Rated speed rpm : 450	+ control lever + position degree : 94.0
Rack travel in mm: 5.50	tolerance degree : + 4.0
Tolerance mm : +- 0.10	T RATED SPEED
Del. quantity	rack travel mm : 12.10
cm3/1000 strokes : 22.5	+ Rated speed rpm : 810
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance	† + rack travel mm : 4.00
cm3/1000s. : +- 4.5	+ Rated speed rpm : 840
Spreed	Tolerance 1/min : +- 5
Tolerance	Tocci ance is milities.
cm3/1000 strokes : 6.0	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 8.0	Rated speed rpm : 925
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 840
GUIDE SLEEVE POSITION	LOW IDLE
control lever	+ control lever
position degree : FREE	position degree : 75.0
Rated speed rpm : 800	tolerance degree : + 4.0
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Control lever difference
ioterance nan : +- U.2U	+ Grad : 19.0 + tolerance degree : +- 6.0
governor spring	†
pre-tension click setting x : 2.75	+ Setting point w/out bumper spring +
	Rated speed rpm : 450
	rack travel mm : 5.00
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance mm : +- 0.10
Rated speed rpm : 750	Testing:
•	<del>†</del>

Rated speed rpm : 450 rack travel mm : 5.50 Tolerance mm : +- 0.10

2.00 rack travel mm Rated speed rpm : 500 Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 750 rack travel mm : 13.15 : + 0.05 Tolerance mm

Start interlock

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel num : 20.50 : +- 0.50 Tolerance mm

Del. quantity

cm3/1000 strokes : 140.5

Tolerance

cm3/1000 strckes : +- 10.0

Check tolerance

cm3/1000s. : +- 15.0

LOW IDLE

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 22.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.02.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 053

Injection pump

Pump designation : PES6A95D320/3RS2916

EP type number : F 002 A10 010

Governor

Governer design. : RSV475...1050A0C933R

Governer no. : F 002 A20 239

Cust. part No. : 3283920

Customer-spec. information Customer : CUMMINS Motor : 6BT Power KW : 107.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 : + 2.0 Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Chack

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance : + 0.10 Check

tolerance \*NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 101.8

+ Tolerance
+ cm3/1000 strokes : +- 1.0
+ Check tolerance
+ cm3/1000s. : +- 3.0
+ Spreed
Tolerance
· · · · · · · · · · · · · · · · · · ·
+ cm3/1000 strokes : 4.0
+ Check tolerance
+  cm3/1000s. : 6.5
+
†
†
+ CONTROL LEVER
†
+ control lever
+ position degree : 105.0
+ tolerance degree : + 4.0
+
+ RATED SPEED
+ rack travel mm : 11.20
+ Rated speed rpm : 1095
+ Tolerance 1/min : +- 5
+
+ rack travel mm : 4.00
+ Rated speed rpm : 1200
+ Tolerance 1/min : + 5
T Total ance Thin 11 . The J
7
+ rack travel mm : 0.85
+ Tolerance mm : + 0.55
† Rated speed rpm : 1260
†
+ rack travel mm : 4.00
+ Rated speed rpm : 1200
†
<del>-</del> (-
†
+ LOW IDLE
T LOW IDLE
<u></u>
†
t control lever
control lever
position degree : 86.0
position degree : 86.0 tolerance degree : + 4.0
position degree : 86.0 tolerance degree : + 4.0 Control lever difference
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0
position degree : 86.0 tolerance degree : + 4.0 Control lever difference
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15 Tolerance mm : + 0.10
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15 Tolerance mm : + 0.10  Testing:
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 475
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 475 rack travel mm : 5.65
position degree : 86.0 tolerance degree : + 4.0  Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 475

rack travel mm 2.00 Rated speed rpm Tolerance 1/min ; +-30 Rated speed rpm : 100 CRT mm min. : > 19.00 TORQUE CONTROL Rated speed rpm 1050 rack travel mm 12.20 : +- 0.05 Tolerance mm Rated speed rpm 008 : 12.70 : + 0.10 rack travel mm : Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 Pressure hPa 800 Pressure hPa 500 Rated speed rpm rack travel mm 10.70 Tolerance mm : + 0.10 MEASUREMENT 500 Rated speed rpm : 700 Pressure hPa rack travel mm 12.25 : + 0.20Tolerance mm : 560 : 11.90 Pressure hPa rack travel mm : Tolerance mm : +- 0.20 Start interlock FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 800 800 Rated speed rpm : Del. quantity cm3/1000 strokes : 109.9

Check tolerance : +- 4.0 cm3/1000s. Aneroid pressure hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 82.9 Tolerance cm3/1000 strokes : + 1.0Check tolerance cm3/1000s. : +-3.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 120.5 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 15.0 LOW IDLE Rated speed rpm : 475

Del. quantity cm3/1000 strokes : 18.8 Tolerance cm3/1000 strokes : +-2.0 Check tolerance : +cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

End of test specification sheet

Tolerance

cm3/1000 strokes : +- 2.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 17.02.97 : ISO 4113

Combination No. : 0 401 849 759

Injection pump

Pump designation : PE10P120A520/4LS3866

EP type number : 0 411 829 712

Governor

Governer design. : RQ300/1150PA1322

Governer no. : 0 421 801 814

Cust. part No. :

Customer-spec. information

Customer : DHI
Motor : D2840L

Power KW : 382.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity min. l/h : 100 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 4.30 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 10-9-4-1-8

: - 6- 3- 5- 2

: 0-45-72-117-144 Phasing

: -216-261-288-333 : +- 0.30

Tolerance

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance \*NW : + 0.75

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.00

Tolerance mm :  $\leftarrow$  0.05

		- guide sleeve
Del. quantity cm3/1000 strokes	: 192.0	travel mm : 5.00 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 490 guide sleeve
Check tolerance cm3/1000s.	: + 4.0	travel mm : 6.00 Tolerance mm : + 0.10
Spreed		Rated speed rpm : 1450 guide sleeve
	-	travel mm : 11.50
Tolerance cm3/1000 strokes	: 7.0	Tolerance mm : + 0.50
Check tolerance cm3/1000s.	: 10.0	GUIDE SLEEVE POSITION
	7	- control lever - position degree : 109
Rated speed rpm	: 300	- position degree : 109 - Rated speed rpm : 1297
hated speed (bill	. 500	r Kated Speed rpm : 1297
Rack travel in mm	: 6.90	Rack travel in mm : 10.98
Tolerance min	: +- 0.10	Folerance mm : - 0.80
Del. quantity		- 0.00
cm3/1000 strokes	: 20.0	
Tolerance	-	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	: +- 3.0	-
Check tolerance		- Rated speed rpm : 1150
cm3/1000s.	: +- 6.0	Aneroid pressure
Spreed	-	- hPa : -
Tolerance	-	Del. quantity
cm3/1000 strokes	: 6.0	- cm3/1000 strokes : 192.0
Check tolerance	-	- Tolerance
cm3/1000s.	: 9.0	cm3/1000 strokes : +- 1.0
	†	Check tolerance
(D) CETTING OF THE	UESTION NUMB	cm3/1000s. : +- 4.0
(B) SETTING OF IN	JECTION PUMP	- Spreed
WITH GOVERNOR	7	Tolerance - cm3/1000 strokes : 7.0
	<u>_</u>	- cm3/1000 strokes : 7.0 - Check tolerance
GUIDE SLEEVE TRAVI	Fi	- cm3/1000s. : 10.0
COIDE OFFERE LIVER		- ciis/10003 10.0
Rated speed rpm guide sleeve	: 1222	
travel nm	: 6.37	CONTROL LEVER
Tolerance mm	: ← 0.10 →	
	+	- control lever
Rated speed rpm	: 300	position degree : 31.0
guide sleeve	†	- tolerance degree : +- 4.0
travel mm	: 2.11	
Tolerance mm	: +- 0.10	control lever
Rated speed rpm	: 1150	position degree : 93.0 tolerance degree : +- 4.0
guide sleeve	†	
travel mm	: 6.00	RATED SPEED
Tolerance mm	: +- 0.10	rack travel mm : 11.00
Ontal massel and	. /17	Rated speed rpm : 1217
Rated speed rpm	: 413	- Tolerance 1/min : +- 5

rack travel mm Rated speed rpm Tolerance 1/min	: 1330	Rated speed rpm : 500 rack travel mm : 10.25 Tolerance mm : + 0.20
rack travel mm Tolerance mm		- MEASUREMENT
Rated speed rpm	: 1450	- Rated speed rpm : 500
		- Pressure hPa : 520 - rack travel mm : 11.55 - Tolerance mm : +- 0.20
LOW IDLE	4	-
	+	- Pressure hPa : 400
	+	rack travel mm : 10.75
control lever	. 74.0	Tolerance mm : + 0.05
position degree tolerance degree		- Start interlock
control lever	4	- Rated speed rpm :> 100
position degree tolerance degree		- Rated speed rpm : < 250
_	+	- Check
Testing:	+	- speed 1/min : > 80
Dated anned are	. 200	- Check
Rated speed rpm	: 300 : 6.90	- speed 1/min : < 270
rack travel mm Tolerance mm	: +- 0.10	
	1	- FUEL DELIVERY CHARACTERISTICS
rack travel mm		•
Rated speed rpm		- Aneroid pressure
Tolerance 1/min	: +- 20 +	· hPa : -
Rated speed rpm	: 200	Rated speed rpm : 650 Del. quantity
nated speed i pill		- cm3/1000 strokes : 204.0
CRT mm min.	: > 9.36	· Talerance
	+	cm3/1000 strokes : +- 3.0
TODOLE CONTROL	<del></del>	- Check tolerance
TORQUE CONTROL	1	- cm3/1000s. : +- 6.0
Rated speed rpm		- Aneroid pressure
rack travel mm	: 12.00	· hPa : -
Tolerance mm	: ← 0.05	Rated speed rpm : 500
Rated speed rpm	: 650	- Del. quantity - cm3/1000 strokes : 144.0
rack travel mm		Tolerance
Tolerance mm	: +- 0.10	- cm3/1000 strokes : +- 1.0
	+	- Check tolerance
ANEROID/ALTITUDE		- cm3/1000s. : +- 4.0
COMPENSATOR TEST	1	
SETTING	1	STARTING FUEL DELIVERY
	4	Rated speed rpm : 100
Rated speed rpm	: 500	Del. quantity
Pressure hPa		- cm3/1000 strokes : 210.0
rack travel mm	: 12.00 + : +- 0.05	Tolerance
Tolerance mm	. = 0.0	cm3/1000 strokes : +- 10.0 Check tolerance
Pressure hPa	: - 1	cm3/1000s. : +- 14.0
	•	

# LOW IDLE

Rated speed rpm 300 Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.02.97 : ISO 4113

Combination No. : 0 401 876 345

Injection pump

Pump designation : PE6P120B320RS3301 EP type number : 0 411 826 819

Governor

Governer design. : RSV250...1100P0A656

Governer no. : 0 421 833 574

Sust. part No. : 3826519 PO2 v. 12/96

Customer-spec. information Customer : PENTA

Motor : TAMD 102 D : 315.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C 40

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

208.5 bar

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 8.10

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-: 4

: 0-60-120-180-240 : +- 0.30 Phasing

Tolerance

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 13.20

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 280.0  Tolerance cm3/1000 strokes : + 1.0  Check tolerance cm3/1000s. : + 4.0  Spreed  Tolerance cm3/1000 strokes : 7.0	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 280.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0
Check tolerance : 11.0	CONTROL LEVER control lever
Rated speed rpm : 250	position degree : 44.0 tolerance degree : + 4.0
Rack travel in mm : 6.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 24.0	control lever position degree : 94.0 tolerance degree : +- 4.0
Tolerance cm3/1000 strokes : +- 2.5 Check tolerance cm3/1000s. : +- 5.0 Spreed	RATED SPEED  rack travel mm : 12.20  Rated speed rpm : 1145  Tolerance 1/min : + 5
Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0	+ rack travel mm : 4.00 + Rated speed rpm : 1230 - Tolerance 1/min : +- 15 + rack travel mm : 0.85
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance mm : +- 0.55 Rated speed rpm : 1350 rack travel mm : 4.00
GUIDE SLEEVE POSITION	Rated speed rpm : 1240
control lever position degree : - 3 Rated speed rpm : 800	LOW IDLE
Rack travel in mm: 0.50 Tolerance mm: + 0.20	control lever position degree : 69.0 tolerance degree : + 4.0
<pre>governor spring pre-tension click setting x : 2.25</pre>	control lever position degree : 19.0 tolerance degree : +- 4.0
FULL LOAD DELIVERY AT FULL LOAD STOP	Setting point w/out bumper spring
Rated speed rpm : 1100	Rated speed rpm : 250 rack travel mm : 5.70

Tolerance mm	: +- 0.10	+ Rated speed rpm : 700	
Testing:		the Del. quantity cm3/1000 strokes : 303.	0
	0.75	+ Tolerance	
Rated speed rpm	: 250	+ cm3/1000 strokes : +- 3.	0
rack travel mm Tolerance mm	: 6.20	+ Check tolerance	_
loterance mm	: + 0.10	+ cm3/1000s. : +- 6.	0
	. 2.00	+ Spreed	
rack travel mm	2.00	+ Tolerance	_
Rated speed rpm Tolerance 1/min	: 3/0	+ cm3/1000 strokes : 8.	U
Toterance Tymin	; +- 30	+ Check tolerance	•
		+ cm3/1000s. : 12.	U
TORQUE CONTROL		Anonoid procesure	
TORGOE CONTROL		+ Aneroid pressure + hPa : -	
Rated speed rpm	: 1100	Rated speed rpm : 700	
rack travel mm Tolerance mm	: + 0.05	the Del. quantity the delta product of the delta pr	0
roterance min	. + 0.05		U
Dated speed non	. 700	Tolerance	0
Rated speed rpm rack travel mm	. 17 20	+ cm3/1000 strokes : + 1.	U
Tolerance mm	13.20	+ Check tolerance	0
ioterance mm	· — U.U3	+ cm3/1000s. : + 4.	U
		†	
ANEROID/ALTITUDE			
COMPENSATOR TEST		STARTING FUEL DELIVERY	
		+ DELITERY	
		+ Rated speed rpm : 100	
SETTING		+ rack travel mm : 15.0	n
		+ Tolerance mm : + 0.5	in .
Rated speed rpm	: 500	1	•
Pressure hPa		1	
rack travel mm		1	
Tolerance mm			
	; T U.113	•	
TO CONTRACTOR THE STATE OF THE	; +- 0.05	→ LOW IDLE	
	: -	LOW IDLE	
Pressure hPa	: -	+	
Pressure hPa Rated speed rpm	500	Rated speed rpm : 250	
Pressure hPa Rated speed rpm rack travel mm	: - : 500 : 8.10	Rated speed rpm : 250	n
Pressure hPa Rated speed rpm rack travel mm	: - : 500 : 8.10	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24.	0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 8.10	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24. Tolerance	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 8.10	Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 24.  Tolerance  cm3/1000 strokes : +- 2.	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 8.10 : ← 0.10	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : +- 2. Check tolerance	5
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 8.10	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : +- 2. Check tolerance cm3/1000s. : +- 5.	5
Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm	: 500 : 8.10 : ← 0.10	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed	5
Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa	: 500 : 8.10 : + 0.10 : 500 : 1120	Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 24.  Tolerance  cm3/1000 strokes : + 2.  Check tolerance  cm3/1000s. : + 5.  Spreed  Tolerance	5 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa rack travel mm	: 500 : 8.10 : ← 0.10 : 500 : 1120 : 4.70	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3.	5 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa	: 500 : 8.10 : + 0.10 : 500 : 1120	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3.	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24. Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance cm3/1000s. : 6.	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 24.  Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24. Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance cm3/1000s. : 6.	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25 : + 0.05	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24. Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance cm3/1000s. : 6.	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25 : + 0.05	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24. Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance cm3/1000s. : 6.	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm Start interlock	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25 : + 0.05	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24. Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance cm3/1000s. : 6.	5 0 0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm Start interlock	: 500 : 8.10 : + 0.10 : 500 : 1120 : 4.70 : + 0.15 : 160 : 0.25 : + 0.05	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 24. Tolerance cm3/1000 strokes : + 2. Check tolerance cm3/1000s. : + 5. Spreed Tolerance cm3/1000 strokes : 3. Check tolerance cm3/1000s. : 6.	5 0 0

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Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 18.02.97 : ISO 4113

Combination No. : 0 402 046 868

Injection pump

Pump designation : PES6P110A320RS3349

EP type number : 0 412 016 753

Governor

Governer design. : RQV350...1400PA1267K

Governer no. : 0 421 815 503

Cust. part No. : 16700-08810

Customer-spec. information

Customer : NMI

: M 3.6 TI L Motor

Power KW

: 117.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1 Inlet press. bar :

Overflow quantity min. L/h : 100 Tolerance L/h : + 20.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter:

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50

Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Tolerance : 0-60-120-180-240

Check

tolerance \*NW

: +- 0.50

Start of delivery mark

Tolerance

: +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 12.50

Tolerance mm : + 0.05

E14

Del. quantity cm3/1000 strokes	: 134.0	Tolerance mm : +- 0.25
Tolerance		Rated speed rpm : 1730 guide sleeve
cm3/1000 strokes	: +- 1.0	travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s.	: +- 3.0	
Spreed		GUIDE SLEEVE POSITION
		<del>†</del>
Tolerance		† control lever
cm3/1000 strokes	: 5.0	→ position degree : - 1
		+ Rated speed rpm : 1545
Check tolerance		+
cm3/1000s.	: 9.0	+ Rack travel in mm : 11.50
		Tolerance mm : + 2.00
		Í
Rated speed rpm	: 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Dani America III	0.50	The state of the s
Rack travel in m		Rated speed rpm : 1300
Tolerance mm	: ← 0.10	+ Aneroid pressure
Del. quantity		† hPa : -
cm3/1000 strokes	: 28.0	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 134.0
cm3/1000 strokes	; <del>+-</del> 2.5	+ Tolerance
Check tolerance		+ cm3/1000 strokes : +- 1.0
cm3/1000s.	: <b>←</b> 5.0	† Check tolerance
Spreed		+ cm3/1000s. : + 3.0
Tolerance		+ Spreed
cm3/1000 strokes	: 6.0	† Tolerance
Check tolerance		+ cm3/1000 strokes : 5.0
cm3/1000s.	: 10.0	- Check tolerance
		- cm3/1000s. : 9.0
(B) SETTING OF I	NIECTION DUMP	†
WITH GOVERNOR	NUECTION POMP	Ť
MILL GOACKINGK		CONTROL LEVER
-		T CONTROL LLVER
GUIDE SLEEVE TRA	VFI	
	• • • • • • • • • • • • • • • • • • • •	position degree : 64.0
Rated speed rpm	: 1421	tolerance degree : +- 4.0
guide sleeve		+
travel mm	: 10.03	
Tolerance mm	: +- 0.15	position degree : 122.0
		tolerance degree : +- 4.0
Rated speed rpm	: 350	+
guide sleeve	<del>-</del>	A RATED SPEED
travel mm	: 1.46	rack travel mm : 11.50
Tolerance mm	: +- 0.20	Rated speed rpm : 1410
		+ Tolerance 1/min : +- 5
Rated speed rpm	: 996	1
guide sleeve		frack travel mm : 4.00
travel mm	: 6.78	Rated speed rpm : 1540
Tolerance mm	: +- 0.25	Tolerance 1/min : + 15
		+
Rated speed rpm	: 610	† rack travel mm : 0.50
guide sleeve		+ Tolerance mm : +- 0.50
travel mm	: 3.96	+ Rated speed rpm : 1640
		. ,

LOW IDLE	
control lever position degree tolerance degree	
control lever position degree tolerance degree	: 27.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 9.50 : + 0.10
Rated speed rpm	: 250
CRT mm min.	: > 10.50
Rated speed rpm	: 400
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1300 : 12.50 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 780 : 11.95 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 11.70 : + 0.20
Start interlock	
Rated speed rpm Rated speed rpm	: < 200 : > 250
Check speed 1/min	: < 180
Check speed 1/min	: > 270
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	780

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
STARTING FUEL DEL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 200.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 350 : 28.0 : + 2.5 : + 5.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.02.97 Test oil : ISO 4113

Combination No. : 0 402 618 812

Injection pump

Pump designation : PE8P12OA3OOLS7908 EP type number : 0 412 628 922

Governor

Governer design. :
Governer no. :

Cust. part No. : 04223920KY

Customer—spec. information Customer : KHD

Motor : BF8M1015/C

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 220 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-5

: - 3- 1

Phasing : 0-45-90-135-180

: -270-315

Tolerance :  $\leftarrow$  0.30

Check

tolerance \*NW : +- 0.50

Start of delivery blocking

\*NW after s.o.d. : 315.00

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 950

900

Rack travel in mm Tolerance mm	: 13.30 : + 0.05
Del. quantity cm3/1000 strokes	: 350.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 4.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0
Rated speed rpm Del. quantity	: 300
cm3/1000 strokes	: 25.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000S. Spreed	: +- 6.0
Tolerance	0.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

cm3/1000 strokes :

Check tolerance cm3/1000S.

## FULL LOAD DELIVERY AT FULL LOAD STOP

8.0

12.0

950 Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance 9.0 cm3/1000S.

TORQUE CONTROL

Rated speed rpm : 950 rack travel mm : 13.30 Tolerance mm : +- 0.05

Start interlock

LOW IDLE

Rated speed rpm 300 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s.6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.02.97 : ISO 4113

Combination No. : 0 402 646 652

Injection pump

Pump designation : PE6P130A720RS7137 EP type number : 0 412 636 832

Governor

Governer design. : RQ750PA865-3 Governer no. : 0 421 801 751

Cust. part No. : 866371 P07 v.12.96

Customer-spec. information Customer : PENTA : TWD 1630 G Motor

Power KW

: 392.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. \*C : 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 3.65 : **←** 0.05 Tolerance mm

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : +- 0.30

Check

tolerance "NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.25 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 450.0

Tolerance cm3/1000 strokes	; +- 1.5	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850
Check tolerance cm3/1000s.	: <b>←</b> 5.0	ASSEMBLY GOVERNO	R SETTING
Spreed		Rated speed rpm	
Tolerance cm3/1000 strokes	: 7.0	Rated speed rpm Tolerance 1/min	: 787
Check tolerance cm3/1000s.	: 11.0	rack travel mm	: 4.00
		+ rack travel mm + Tolerance mm + Rated speed rpm	: 0.50 : + 0.50 : 850
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	Rated speed rpm rack travel mm	
	Y AT FULL LOAD STOP	Rated speed rpm Tolerance 1/min rack travel mm	: <del>+-</del> 5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 700 : - : 450.0	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 1.5 : ← 5.0	Rated speed rpm rack travel mm	
Spreed Tolerance cm3/1000 strokes		Rated speed rpm Tolerance 1/min rack travel mm	: <del>+-</del> 5
Check tolerance cm3/1000s.	: 11.0	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850
CONTROL LEVER	20.0	Rated speed rpm rack travel mm	
position degree tolerance degree control lever	: 29.0 : +- 4.0	Rated speed rpm Tolerance 1/min rack travel mm	: +- 5
position degree tolerance degree	: 90.0 : ← 4.0	rack travel mm Tolerance mm	: 0.50
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min		Rated speed rpm	<b>:</b> 850
Tolerance 1/min		+ Rated speed rpm + rack travel mm	: 752 : 13.25
Rated speed rpm Tolerance 1/min	: 789	Rated speed rpm Tolerance 1/min rack travel mm	: <del>+-</del> 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 753 rack travel mm : 13.25

Rated speed rpm : 792
Tolerance 1/min : +- 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

## TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 14.25 Tolerance mm : + 0.05

Start interlock

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 18,02,97 : ISO 4113 Test oil

Combination No. : 0 402 646 667

Injection pump

Pump designation : PE6P12OA32ORS7412

EP type number : 0 412 626 953

Governor

Governer design. : RGV275...1000PA1278K

Governer no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec, information

Customer : DAF

: XF 315 M Motor Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 140 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : +- 0.30

Check

tolerance \*NW : **←** 0.50

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm: 13.40

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 318.0	Tolerance mm : +- 0.25
Tolerance	Rated speed rpm : 1310  + guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 13.50
Charle to Large	Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : +- 4.0	İ
***************************************	GUIDE SLEEVE POSITION
Spreed	1
Tolerance	control lever
cm3/1000 strokes : 5.0	position degree : - 1
	+ Rated speed rpm : 1158
Check tolerance	+
cm3/1000s. : 9.0	+ Rack travel in mm: 12.00
	Tolerance mm : + 2.70
Rated speed rpm : 275	full LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 3.80	Rated speed rpm : 980
Tolerance mm : + 0.10	+ Aneroid pressure
Del. quantity	+ hPa : 1500
cm3/1000 strokes : 17.0	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 318.0
cm3/1000 strokes : + 3.0	+ Tolerance
Check tolerance cm3/1000s. : +- 6.0	cm3/1000 strokes : + 1.0
Spreed	Check tolerance cm3/1000s. : +- 4.0
Tolerance	Spreed
cm3/1000 strokes : 8.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	+ Check tolerance
	+ cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP	†
WITH GOVERNOR	I
Marin Got Million	+ CONTROL LEVER
	+
GUIDE SLEEVE TRAVEL	+ control lever
Rated speed rpm : 1077	+ position degree : 119.0 + tolerance degree : + 4.0
Rated speed rpm : 1077 guide sleeve	tolerance degree : + 4.0
travel mm : 10.24	T RATED SPEED
Tolerance mm : + 0.15	+ rack travel mm : 12.40
	+ Rated speed rpm : 1040
Rated speed rpm : 275	+ Tolerance 1/min : + 5
guide sleeve	+ Check
travel mm : 2.04	+ speed 1/min : + 10
Tolerance mm : + 0.20	t needs through the control of the c
Rated speed rpm : 704	+ rack travel mm : 4.00 + Rated speed rpm : 1145
guide sleeve	Tolerance 1/min : +- 15
travel mm : 6.53	- Check
Tolerance mm : + 0.25	+ speed 1/min : +- 20
	+
Rated speed rpm : 400	+ rack travel mm : 0.50
guide sleeve	Tolerance mm : + 0.50
travel mm : 3.92	+ Rated speed rpm : 1275

#### LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 3.80
Tolerance mm : + 0.10

Rated speed rpm : 175

CRT mm min. : > 6.60

Rated speed rpm : 300

### TORQUE CONTROL

Rated speed rpm : 980 rack travel mm : 13.40 Tolerance mm : + 0.05

Rated speed rpm : 750 rack travel mm : 13.35 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 13.10 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 12.55 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 12.10 Tolerance mm : + 0.10

Rated speed rpm : 1000 rack travel mm : 13.40 Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 980 Pressure hPa : 1500 rack travel mm : 13.40 Tolerance mm : +- 0.05

Pressure hPa : - Rated speed rpm : 980 rack travel mm : 8.55 Tolerance mm : + 0.20

MEASURFMENT

Rated speed rpm : 980

Pressure hPa : 520
rack travel mm : 12.20
Tolerance mm : + 0.05

Pressure hPa : 210 rack travel mm : 9.80 Tolerance mm : + 0.15

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 750

Del. quantity cm3/1000 strokes : 342.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : +- 5.0

Spreed Tolerance

cm3/1000 strokes : 8.0 Check tolerance

cm3/1000s. : 12.0

Aneroid pressure

hPa : Rated speed rpm : 600
Del. quantity

cm3/1000 strokes : 195.0

Tolerance cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

# LOW IDLE

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Cneck tolerance
cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.02.97 : ISO 4113 Test oil

Combination No. : 0 400 864 099

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1250A5C858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1595 KY

Customer-spec. information Customer : KHD-DMI

: F4L912/913\_NEU Motor

: 54.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing Phasing Tolerance

: + 0.50

Check

tolerance °NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance - cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance - cm3/1000s. : 8.0 -	
	CONTROL LEVER
Rated speed rpm : 325	control lever position degree : 102.0 tolerance degree : +- 4.0
Rack travel in mm: 8.50 - Tolerance mm: + 0.10 - Del. quantity -	RATED SPEED : 10.35
cm3/1000 strokes : 11.5 - Tolerance -	Rated speed rpm : 1295 Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0 - Check tolerance -	
cm3/1000s. ; + 4.5 - Spreed - Tolerance -	rack travel mm : 4.00 Rated speed rpm : 1339 Tolerance 1/min : +- 15
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance - cm3/1000S. : 9.0 -	Tolerance mm : +- 0.55 Rated speed rpm : 1510
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00 Rated speed rpm : 1360
GUIDE SLEEVE POSITION -	LOW IDLE
control lever - position degree : FREE - Rated speed rpm : 200 -	control lever position degree : 69.0 tolerance degree : +- 4.0
Rack travel in mm : 0.50 - Tolerance mm : +- 0.20 -	Setting point w/out bumper spring
governor spring - pre-tension - click setting x : 3.00 -	Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
TOTAL SECURITY X . 5.00	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325 rack travel mm : 8.50
	L rack clave( iiiii . 0.00
Rated speed rpm : 1250 - Aneroid pressure -	Tolerance mm : + 0.10
Aneroid pressure - hPa :	rack travel mm : 2.00 Rated speed rpm : 473
Aneroid pressure - hPa :	rack travel mm : 2.00
Aneroid pressure hPa : Del. quantity - cm3/1000 strokes : 76.0 - Tolerance - cm3/1000 strokes : + 1.0 -	rack travel mm : 2.00 Rated speed rpm : 473
Aneroid pressure hPa : Del. quantity - cm3/1000 strokes : 76.0 - Tolerance -	rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30

Rated speed rpm : 1250 : 11.35 rack travel mm Tolerance mm : +- 0.05

Rated speed rpm : 750

Start interlock

### STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm : 20.25 : +- 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. : +- 10.0

### LOW IDLE

325 Rated speed rpm :

Del. quantity cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

: +- 4.5 cm3/1000S.

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.02.97 Test oil : ISO 4113

Combination No. : 9 400 030 738

Injection pump

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A06851R

Governer no. : 9 420 034 717

Cust. part No. : 3929408

Customer-spec. information Customer : CDC Motor : 6BT Power KW : 98.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

F01

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing Tolerance Phasing : 0-60-120-180-240

: +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance

Check

tolerance \*NW : + 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 11.05 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 95.2	Aneroid pressure hPa : 900
Tolerance	Del. quantity cm3/1000 strokes : 95.2 Tolerance
Check tolerance	cm3/1000 strokes : + 1.0 Check tolerance
cm3/1000s. : + 3.0	cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	
<del></del> ‡	CONTROL LEVER
Rated speed rpm : 475	control lever position degree : 104.0 tolerance degree : + 4.0
Rack travel in mm: 5.10 Tolerance mm: + 0.10	RATED SPEED
Del. quantity	rack travel mm : 10.00
cm3/1000 strokes : 18.5	Rated speed rpm : 1165 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	
Check tolerance	rack travel mm : 4.50 Rated speed rpm : 1240
Spreed +	Tolerance 1/min : +- 5
cm3/1000 strokes : 6.0 +	rack travel mm : 0.85
cm3/1000s. : 8.0	Tolerance mm : +- 0.55 Rated speed rpm : 1325
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.50 Rated speed rpm : 1240
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 85.0 tolerance degree : + 4.0
Rack travel in mm: 0.50	Control lever difference
Tolerance mm : + 0.20	Grad : 19.0 tolerance degree : +- 6.0
governor spring pre-tension click setting x : 5.00	Setting point w/out bumper spring
click setting x : 5.00	Rated speed rpm : 475
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 4.60 Tolerance mm : +- 0.10
Rated speed rpm : 1100	Testing:

Rated speed rpm : 475 rack travel mm : 5.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00 TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 11.05 Tolerance mm : +- 0.05 Rated speed rpm : 800 rack travel mm : 11.20 : +- 0.20 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 800 Pressure hPa : 900 Pressure hPa Rated speed rpm : 803 rack travel mm : 9.40 : +- 0.20 Tolerance mm **MEASUREMENT** Rated speed rpm : 800 Pressure hPa : 560 rack travel mm : 10.60 Tolerance mm : +- 0,20 Pressure hPa : 400 rack travel mm : 10.00 : +- 0.20 Tolerance mm Start interlock FUEL DELIVERY CHARACTERISTICS Aneroid pressure 900 800 Rated speed rpm : Del. quantity cm3/1000 strokes : 102.0 Tolerance cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance cm3/1000s. : +- 4.0 Aneroid pressure hPa Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 76.5 Tolerance cm3/1000 strokes : + 1.0Check tolerance cm3/1000s. : <del>--</del> 3.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50
Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 120.5 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 15.0 LOW IDLE Rated speed rpm : 475 Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance

End of test specification sheet

8.0

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 20.02.97 : ISO 4113

Combination No. : F 002 A0Z 007

Injection pump

Pump designation : PES6A95D32O/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A0C881R

Governer no. : F 002 A20 207

Cust. part No. : 3928597

Customer-spec. information Customer : CUMMINS Motor : 6BTA

Power KW

: 122.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 : **←** 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5 Tolerance bar : <del>+-</del> 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 600 x length mm :

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Start of delivery blocking

\*NW after s.o.d. : 8.50 Tolerance : + 0.10

Check

tolerance \*NW : **←** 0.29

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.85 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 115.4

FO4

Tolerance cm3/1000 strokes : + 1.0  Check tolerance cm3/1000s. : + 3.0  Spreed  Tolerance cm3/1000 strokes : 4.0  Check tolerance cm3/1000s. : 6.5  Rated speed rpm : 475  Rack travel in mm : 5.20 Tolerance nmm : + 0.10 Del. quantity cm3/1000 strokes : 21.5  Tolerance cm3/1000 strokes : 21.5  Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5  Spreed Tolerance cm3/1000s. : 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring		
Spreed  Tolerance cm3/1000 strokes : 4.0  Check tolerance cm3/1000s. : 6.5  Rated speed rpm : 475  Rack travel in mm : 5.20 Tolerance nm : + 0.10 Del. quantity cm3/1000 strokes : 21.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	1 1 = 12	: +- 1.0
Tolerance cm3/1000 strokes : 4.0  Check tolerance cm3/1000s. : 6.5  Rated speed rpm : 475  Rack travel in mm : 5.20 Tolerance nm : + 0.10 Del. quantity cm3/1000 strokes : 21.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20		: + 3.0
Check tolerance cm3/1000s. : 6.5  Rated speed rpm : 475  Rack travel in mm : 5.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 21.5 Tolerance cm3/1000 strokes : + 2.0 Check 'colerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	Spreed	
Rated speed rpm : 475  Rack travel in mm : 5.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 21.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20		: 4.0
Rack travel in mm: 5.20 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 21.5 Tolerance cm3/1000 strokes: + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes: 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree: FREE Rated speed rpm: 800  Rack travel in mm: 0.50 Tolerance mm: + 0.20		: 6.5
Tolerance nm : + 0.10  Del. quantity cm3/1000 strokes : 21.5  Tolerance cm3/1000 strokes : + 2.0  Check Tolerance cm3/1000s. : + 4.5  Spreed  Tolerance cm3/1000 strokes : 6.0  Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	Rated speed rpm	: 475
Tolerance cm3/1000 strokes : 21.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	Tolerance rum	
Cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	cm3/1000 strokes	: 21.5
cm3/1000s. : + 4.5  Spreed  Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	cm3/1000 strokes	: + 2.0
Cm3/1000 strokes: 6.0 Check tolerance cm3/1000s.: 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	cm3/1000s. Spreed	: + 4.5
cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	cm3/1000 strokes	: 6.0
GUIDE SLEEVE POSITION  control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20		: 8.0
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	WITH GOVERNOR	
Tolerance mm : + 0.20		
governor spring	position degree	
pre-tension click setting x : 3.50	position degree Rated speed rpm Rack travel in mm	: 800 : 0.50
FULL LOAD DELIVERY AT FULL LOAD STOP	position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring pre-tension	: 800 : 0.50 : + 0.20
Rated speed rpm : 1100	position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x	: 800 : 0.50 : ← 0.20 : 3.50
hPa : 1000	position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVERY Rated speed rpm	: 800 : 0.50 : ← 0.20 : 3.50
Del. quantity cm3/1000 strokes : 115.4	position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVERY Rated speed rpm Aneroid pressure hPa	: 800 : 0.50 : ← 0.20 : 3.50 ( AT FULL LOAD STOP : 1100

Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s. Spreed	: +- 3.0
Tolerance cm3/1000 strokes Check tolerance	: 4.0
cm3/1000s.	: 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 103.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 11.80 : 1155 : + 5
rack travel mm Rared speed rpm Tolerance 1/min	: 6.50 : 1225 : + 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1400
rack travel mm Rated speed rpm	: 6.50 : 1225
LOW IDLE	
control loves	

control lever
position degree : 80.0
tolerance degree : + 4.0

Control lever difference
Grad : 23.0
tolerance degree : +- 6.0

Setting point w/out bumper spring

Rated speed rpm : 475 rack travel mm : 4.70 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 475 rack travel mm : 5.20 Tolerance mm : + 0.10

rack travel mm Rated speed rpm	: 2.00 : 555 : + 30
Tolerance 1/min	; <del>←</del> 30
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.85 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 14.00 : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1000
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 9.90 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 600 : 12.50 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 410 : 10.90 : + 0.20
Start interlock	
FUEL DELIVERY CHAI	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1000 : 800
Del. quantity	

Check tolerance cm3/1000s.	: + 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 80.5 : + 1.0 : + 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
LOW IDLE	
Rated speed rpm	: 475
Del. quantity cm3/1000 strokes	: 21.5
Tolerance cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 21.02.97 : ISO 4113

Combination No. : F 002 A0Z 048

Injection pump

Pump designation : PES6A95D320/3RS2916

EP type number : F 002 A10 010

Severnor

Governer design. : RSV475...950AOC927R

Governer no. : F 002 A20 235

Cust. part No. : 3283916

Customer-spec. information Customer : CUMMINS

Motor

: 6BTA-160/1900

Power KW

: 119.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

: 208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

F07

x inside diameter :

x length mm :

2.0 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : +- 0.05 Tolerance mm

: ← 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance min : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance : +- 0.10

Check

tolerance °NW : + 0.29

Barrel no.

: 1

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm: 13.30

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 119.4

Tolerance cm3/1000 strokes : +- 1.0	- Tolerance - cm3/1000 strokes : +- 1.0 - Check tolerance
Check tolerance cm3/1000s. : +- 3.0	- cm3/1000s. : +- 3.0 - Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	- Check tolerance - cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	- CONTROL LEVER
Rated speed rpm : 475	control lever position degree : 95.0 tolerance degree : +- 4.0
Rack travel in mm : 5.90 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.5	RATED SPEED rack travel mm : 12.30 Rated speed rpm : 1000 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000S. : +- 4.5 Spreed	rack travel mm : 4.00 Rated speed rpm : 1075 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 6.0 Check tolerance	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1200
cm3/1000S. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1075
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 78.0 tolerance degree : + 4.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Control lever difference Grad: 17.0 tolerance degree: +- 6.0
governor spring pre-tension	Setting point w/out bumper spring
click setting x : 2.00	Rated speed rpm : 475 rack travel mm : 5.10 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 950	Testing:
Rated speed rpm : 950 Aneroid pressure hPa : 850 Del. quantity cm3/1000 strokes : 119.4	Rated speed rpm : 475 rack travel mm : 5.90 Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 540
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 950 rack travel mm : 13.30 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 850

Pressure hPa : Rated speed rpm : 500
rack travel mm : 9.80
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550 rack travel mm : 12.50 Tolerance mm : + 0.20

Pressure hPa : 350 rack travel mm : 11.30 Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 75.6

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 122.5

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : + 15.0

LOW IDLE

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 23.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 052

Injection pump

Pump designation : PES6A95D320/3RS2916 EP type number : F 002 A10 010

Governor

Governer design. : RSV475...1000A0C932R

Governer no. : F 002 A20 238

Cust. part No. : 328 3918

Customer—spec. information
Customer : CUMMINS
Motor : 6BTA-147 HP
Power KW : 106.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50
Tolerance : + 0.10
Check
tolerance \*NW : + 0.29

....

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.60 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 112.3

Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: + 3.0
Spreed	3.0
56. 554	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000s.	: 6.5
	-
Rated speed rpm	: 475
Rack travel in mm	: 5.20
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 17.6
Tolerance	
cm3/1000 strokes Check tolerance	: <b>←</b> 2.0
cm3/1000s.	; <del>+</del> 4.5
Spreed	, <del></del>
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	· • • • • • • • • • • • • • • • • • • •
cm3/1000s.	: 8.0
(B) SETTING OF IN. WITH GOVERNOR	
control lever	
position degree Rated speed rpm	: FREE : 800
Rack travel in mm Tolerance mm	: 0.50 : +- 0.20
governor spring	
pre-tension	
click setting x	: 1.50
FULL LOAD DELIVERY	Y AT FULL LOAD STOP
Rated speed rpm	: 1000
Aneroid pressure hPa	: 1200
Del. quantity	

Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 3.0
Spreed Tolerance cm3/1000 strokes Check tolerance	: 4.0
cm3/1000s.	: 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 92.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 11.60 : 1065 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1130 : + 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1250
rack travel mm Rated speed rpm	: 4.00 : 1130
	······································
LOW IDLE	
control lever position degree	: 75.0

position degree : 75.0 tolerance degree : + 4.0 Control lever difference Grad : 17.0 tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475 rack travel mm : 4.70 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 475 rack travel mm : 5.20 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 112.3

2.00 rack travel mm Rated speed rpm : 540 Tolerance 1/min

Rated speed rpm 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 12.60 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa 1200 ;

Pressure hPa 500 Rated speed rpm : rack travel mm : 10.40 : + - 0.10Tolerance mm

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 600 rack travel mm : 12.10 : + 0.20 Tolerance mm

: 475 Pressure hPa rack travel mm : 11.40 : +- 0.20 Tolerance mm

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 83.9

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +--3.0 STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.50 Tolerance mm

Del. quantity

cm3/1000 strokes : 121.5

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : <del>+-</del> 15.0

LOW IDLE

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 17.6

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.5

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 26.02.97 : ISO 4113

Combination No. : 0 402 746 619

Injection pump

Pump designation : PES6P120A72DRS7423 EP type number : 0 412 726 963

Governor

Governer design. : RQV325...900PA909

Governer no. : 0 421 815 533

Cust. part No. : 313GC5224-P4

Customer-spec. information Customer : MACK : EN7400 Motor Power KW : 298.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : +- 0.1 2.8

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.00

Firing order : 1-5- 3- 6- 2-

Tolerance : 4- 0 70

Check

tolerance \*NW : + 0.75

Start of delivery blocking

: +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.00 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 277.5

1	- Rated speed rpm : 1350
Tolerance	- Mateu speed rpm . 1556 - guide sleeve
cm3/1000 strokes : + 1.0	- travel mm : 13.50
	Tolerance mm : + 0.50
Check tolerance cm3/1000s. : +- 4.0	_
CIIIS/ 10005, ; + 4.0	- FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	-
	- Rated speed rpm : 900
Tolerance cm3/1000 strokes : 5.0	- Aneroid pressure
chis/lood strokes : 5.0	- hPa : 1500 - Del. quantity
Check tolerance	- cm3/1000 strokes : 277.5
cm3/1000s. : 9.0	- Tolerance
	- cm3/1000 strokes : +- 1.0
· 1	- Check tolerance - cm3/1000s. : +- 4.0
Rated speed rpm : 325	- Spreed
· · · · · · · · · · · · · · · · · · ·	- Tolerance
Rack travel in mm: 5.10	- cm3/1000 strokes : 5.0
Tolerance mm : + 0.10 + Del. quantity	- Check tolerance
cm3/1000 strokes : 44.0	- cm3/1000s. : 9.0
Tolerance	-
cm3/1000 strokes : + 3.0	
Check tolerance + 5.0 + 5.0	- CONTROL LEVER
cm3/1000s. : +- 5.0 +- 5.0	- - control lever
Talerance	- position degree : 115.0
cm3/1000 strokes : 8.0	- tolerance degree : +- 4.0
Check tolerance	
cm3/1000s. : 12.0	- RATED SPEED - rack travel mm : 15.00
Ţ	- Rated speed rpm : 945
(B) SETTING OF INJECTION PUMP	- Tolerance 1/min : +- 5
WITH GOVERNOR +	- Check
	- speed 1/min : +- 10
GUIDE SLEEVE TRAVEL	rack travel mm : 4.00
	- Rated speed rpm : 1140
Rated speed rpm : 957	Tolerance 1/min : + 15
guide steeve + travel mm : 8.66 +	- Check - speed 1/min : +- 20
Tolerance mm : +- 0.15	- speed 1/111111 ; +- 20
+	rack travel mm : 0.50
Rated speed rpm : 325	Tolerance mm : + 0.50
guide sleeve + travel mm : 1.79 +	Rated speed rpm : 1200
Tolerance mm : + 0.20	•
+	•
Rated speed rpm : 763	
guide sleeve + travel mm : 7.04 +	LOW IDLE
Tolerance mm : + 0.25	
+	- control lever
Rated speed rpm : 520	position degree : 62.0
guide sleeve + 4.05 +	tolerance degree : +- 4.0
travel mm : 4.05 + Tolerance mm : +- 0.25 +	· · Testing:

Rated speed rpm	325	+ Check
rack travel mm		speed 1/min : < 285
To law and an	0.40	7 Speed 1/11/11 : \ 205
Tolerance mm	: +- 0.10	†
Rated speed rpm	: 225	→ FUEL DELIVERY CHARACTERISTICS
,		1
CRT mm min.	: > 7.00	Aneroid pressure
Geer (mir in 111)	, , , , , , ,	
Detail annual con	. /25	
Rated speed rpm	: 425	Rated speed rpm : 625
		+ Del. quantity
		- + cm3/1000 strokes : 305.5
TORQUE CONTROL		† Tolerance
		+ cm3/1000 strokes : +- 3.0
Rated speed rpm	: 900	+ Check tolerance
rack travel mm		+  cm3/1000s. : + 6.0
Tolerance mm	: ← 0.05	. † Spreed
		+ Tolerance
Rated speed rpm	: 625	cm3/1000 strokes : 8.0
rack travel mm Tolerance mm	: 15.60	+ Check tolerance
Tolerance mm	. +- 0.10	+ cm3/1000s. : 12.0
localance inti	. +- 0.10	T (1115) 10003. : 12.0
	F0.6	†
Rated speed rpm	: 500	+ Aneroid pressure
rack travel mm	: 13.90	+ hPa : -
Tolerance mm	: +- 0.20	Rated speed rpm : 400
		+ Del. quantity
		- + cm3/1000 strokes : 159.0
ANEDOTO /AL TITUDE	•	
ANEROID/ALTITUDE		+ Tolerance
COMPENSATOR TEST		+ cm3/1000 strokes : +- 2.0
		- Check tolerance
		+ cm3/1000s. : + 4.0
SETTING		
02112110		1
Detect aread was	. 000	T
Rated speed rpm	: 900	
Pressure hPa	: 7500	STARTING FUEL DELIVERY
		+
Pressure hPa	: -	+ Rated speed rpm : 100
Rated speed rpm	: 900	+ rack travel mm : 11.20
rack travel mm		+ Tolerance mm : +- 1.60
Tolerance mm		+ Del. quantity
rocerance mm	. +- 0.20	
		+ cm3/1000 strokes : 215.0
MEASUREMENT		† Tolerance
		+ cm3/1000 strokes : $+$ 20.0
Rated speed rpm	: 900	+ Check tolerance
······································		+  cm3/1000s. : +- 25.0
Pressure hPa	: 980	(1157 10000 25.0
rack travel mm	: 14.40	†
Tolerance mm	: <del></del> 0.20	†
Pressure hPa	: 450	+ LOW IDLE
rack travel mm	: 10.35	
Tolerance mm	: +- 0.05	Rated speed rpm : 325
TO COL BITCE THE	0.05	
		+ Del. quantity
Start interlock		+ cm3/1000 strokes : 44.0
		+ Tolerance
Rated speed rpm	: > 100	+ cm3/1000 strokes : +- 3.0
Rated speed rpm	— ·-	+ Check tolerance
	: < 275	
marca operation	: < 275	
	: < 275	+ cm3/1000s. : + 5.0
Check		cm3/1000s. : + 5.0 + Spreed
	: < 275 : > 80	cm3/1000s. : + 5.0 + Spreed + Tolerance
Check		cm3/1000s. : + 5.0 + Spreed

Check tolerance cm3/1000s.	•	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.02.97 : ISO 4113 Test oil

Combination No. : 0 402 746 625

Injection purp

Pump designation : PES6P120A720RS7424

EP type number : 0 412 726 964

Governor

Governer design. : RQV325...875PA944

: D 421 815 539 Governer no.

Cust. part No. : 313GC5223-P2

Customer-spec. information Customer : MACK Motor : EM7-250

Power KW : 187.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance \*C

Overflow valve : 2 413 359 008

Inlet press. bar : Inlet press. bar : 2.8 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : **←** 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: x length mm :

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance num : + 0.10

Rack travel in mm: 12.00 Tolerance mm :  $\leftarrow$  1.00

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance \*NW : **←** 0.75

Start of delivery blocking

Tolerance : - 0.50

Check

tolerance  $^{\circ}NW$  : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 269.5

Tolerance cm3/1000 strokes : + 1.0	guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 4.0	Total file min
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 875 Aneroid pressure hPa : 1200
Check tolerance cm3/1000s. : 9.0	Del. quantity cm3/1000 strokes : 269.5 Tolerance
	<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0</pre>
Rated speed rpm : 340	Spreed Tolerance
Rack travel in mm: 4.70 + Tolerance mm: + 0.10 + Del. quantity	cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0
cm3/1000 strokes : 34.0 +	
cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 5.0	CONTROL LEVER
Spreed Tolerance	control lever position degree : 116.0
cm3/1000 strokes : 8.0 + Check tolerance cm3/1000s. : 12.0 +	tolerance degree : +- 4.0  RATED SPEED
12.0	rack travel mm : 11.40 Rated speed rpm : 920
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance 1/min : +- 5
GUIDE SLEEVE TRAVEL	rack travel mm : 4.00 Rated speed rpm : 1055 Tolerance 1/min : +- 15
Rated speed rpm : 933 + guide sleeve +	rack travel mm : 0.50 Tolerance mm : + 0.50
travel num : 9.87 Tolerance mum : + 0.15	Rated speed rpm : 1200
Rated speed rpm : 340 guide sleeve	
travel mm : 2.25 Tolerance mm : + 0.20	LOW IDLE
Rated speed rpm : 706 guide sleeve	control lever position degree : 63.0
travel mm : 8.09 Tolerance mm : + 0.25	tolerance degree : + 4.0
Rated speed rpm : 480 guide sleeve	Testing: Rated speed rpm : 340
travel mm : 4.59 Tolerance mm : +- 0.25	rack travel mm : 4.70 Tolerance mm : + 0.10
Rated speed rpm : 1260	Rated speed rpm : 240

		4
CRT mm min.	: > 6.34	FUEL DEL TUEDY GUADA OTTO TOTO
Rated speed rpm	: 425	+ FUEL DELIVERY CHARACTERISTICS
		Aneroid pressure
TORQUE CONTROL		
TOMADE CONTROL		+ Rated speed rpm : 510 + Del. quantity
Rated speed rpm	: 875	- cm3/1000 strokes : 345.0
rack travel mm		Tolerance
Tolerance mm	: <b>←</b> 0.05	+ cm3/1000 strokes : +- 3.0
		+ Check tolerance
Rated speed rpm		+  cm3/1000s. : +- 6.0
rack travel mm Tolerance mm		+ Spreed + Tolerance
roterance na	, , , , , , , , , , , , , , , , , , , ,	+ cm3/1000 strokes : 8.0
Rated speed rpm	: 400	Check tolerance
rack travel mm		+ cm3/1000s. : 12.0
Tolerance mm		+
		+ Aneroid pressure
A1170 A 50 A 40 A 50 A 40 A		
ANEROID/ALTITUDE COMPENSATOR TEST		Rated speed rpm : 400
COMPENSATOR 1631		<pre>Del. quantity     cm3/1000 strokes : 183.0</pre>
		Tolerance
SETTING		+ cm3/1000 strokes : + 2.0
		+ Check tolerance
Rated speed rpm		+ cm3/1000s. : +- 4.0
Pressure hPa	: 1200	+
rack travel mm		†
Tolerance mm	: <del>+-</del> 0.10	
Pressure hPa		T STARTING FUEL DELIVERY
Pressure hPa Rated speed rom	: - : 510	+
Pressure hPa Rated speed rpm rack travel mm	510	Rated speed rpm : 100 rack travel mm : 21.00
Rated speed rpm	510 8.70	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50
Rated speed rpm rack travel mm Tolerance mm	510 8.70	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity
Rated speed rpm rack travel mm	510 8.70	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0
Rated speed rpm rack travel mm Tolerance mm MEASUREMENT	: 510 : 8.70 : + 0.20	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 510 : 8.70 : + 0.20	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0
Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm	: 510 : 8.70 : + 0.20 : 510	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm MEASUREMENT	: 510 : 8.70 : + 0.20	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa	510 8.70 + 0.20 510	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	510 8.70 	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa	: 510 : 8.70 : + 0.20 : 510 : 570 : 12.20 : + 0.20 : 285	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm	: 510 : 8.70 : + 0.20 : 510 : 570 : 12.20 : + 0.20 : 285 : 9.90	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa	: 510 : 8.70 : + 0.20 : 510 : 570 : 12.20 : + 0.20 : 285	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm	: 510 : 8.70 : + 0.20 : 510 : 570 : 12.20 : + 0.20 : 285 : 9.90	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock	510 8.70 10.20 510 570 12.20 10.20 285 9.90 10.05	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock  Rated speed rpm	510 8.70 10.20 510 570 12.20 12.20 10.20 285 9.90 10.05	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0 Tolerance
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock	510 8.70 10.20 510 570 12.20 12.20 10.20 285 9.90 10.05	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : + 3.0
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock Rated speed rpm Rated speed rpm Rated speed rpm	510 8.70 10.20 510 570 12.20 12.20 10.20 285 9.90 10.05	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock  Rated speed rpm Rated speed rpm Check	510 8.70 10.20 510 570 12.20 12.20 10.20 285 9.90 10.05 100 100 100 100 100 100 100 1	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 5.0
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock  Rated speed rpm Rated speed rpm Check speed 1/min	510 8.70 10.20 510 570 12.20 12.20 10.20 285 9.90 10.05	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 5.0 Spreed
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock  Rated speed rpm Rated speed rpm Check	510 8.70 10.20 510 570 12.20 12.20 10.20 285 9.90 10.05 100 100 100 100 100 100 100 1	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 5.0
Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  Start interlock  Rated speed rpm Rated speed rpm Check speed 1/min Check	510 8.70 10.20 510 570 12.20 12.20 12.20 10	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0  LOW IDLE  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.02.97 Test oil : ISO 4113

Combination No. : 0 401 496 002

Injection pump

Pump designation : PE6R130/720RS1503 EP type number : 0 411 436 001

Governor

Governer design. : RE31

Governer no. : 0 421 890 201

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8210,42.5000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. \*C : 40
Tolerance \*C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 7.00 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

Check

tolerance \*NW : + 0.40

Barrel no. : 1

(B) POSITIONER TESTI	
Warm-up time: 3 minu n=600 min-1, Uact = 1	tes at 2.5 V
TESTING & SETTING RA	CK TRAVEL SENSOR
Engine speed min-1:	0
Setting point (P, R and H pump)	
Uact V : CRT mm : Tolerance mm :	3.100 13.00 +/- 0.05
	+/- 0.10
Check value (P, R and H pump)	
CRT mm :	1.700 6.15 +/- 0.25
	+/- 0.30
Setting point (M pump)	
Lact V : CRi mm : Tolerance mm : Check	3.100 12.50 +/- 0.05
	+/- 0.10
Check value (M pump)	
Uact V : CRT mm : Tolerance mm :	1.700 5.50 +/- 0.25
	+/- 0.30
Stop position	
deenergi	Value with sed adjusting magnet and control rod in
CRT mm :	stop position. 0.75 +/- 0.25
4-1-man	. / 0.75

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60
Amplitude V: 1.4
Tolerance V: +/- 0.6
Check

tolerance V : +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

Rated speed rpm : 950 3.218 Uact V Del. quantity cm3/1000 strokes : 279.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 12.0 Check tolerance 16.0 cm3/1000s.

## FUEL DELIVERY CHARACTERISTICS

Rated speed rpm 750 Uact V 3.218 Del. quantity cm3/1000 strokes : 297.0 Tolerance cm3/1000 strokes : + 4.5 Check tolerance cm3/1000s. : +- 9.0 Rated speed rpm 550 Uact V 2.300 Del. quantity cm3/1000 strokes : 189.0 Tolerance cm3/1000 strokes :  $\leftarrow$  4.5 Check tolerance

: + 9.0

cm3/1000s.

tolerance mm :  $\pm -0.35$ 

### TEST POINT L1

Rated speed rpm 300 Uact V 1.310 : +- 0.060 Tolerance Volt Check tolerance : +- 0.080 Volt Del. quantity cm3/1000 strokes : 24.0 Tolerance cm3/1000 strokes : + 3.0Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0 :

# STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.700
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 20.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.02.97 Test oil : ISO 4113

Combination No. : 0 402 066 711

Injection pump

Pump designation : PES6P120A120RS3358

EP type number : 0 412 026 784

Governor

Governer design. : RSV475...1150P2A661

Governer no. : 0 421 833 581

Cust. part No. : 3283521

Customer-spec. information Customer : CUMMINS Motor : 6BTAA ELITE Power KW : 139.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : ← 'ž.o Tolerance °C

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 100 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240 Tolerance : + 0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

\*NW after s.o.d. : 6.75 Tolerance : + 0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

+	
Rack travel in mm : 12.90 + Tolerance mm : +- 0.05 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 180.0	Rated speed rpm : 1100 Aneroid pressure
Tolerance + 1.0 +	hPa : 1500 Del. quantity cm3/1000 strokes : 180.0
Check tolerance cm3/1000s. : + 3.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000s. : +- 3.0 Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5
Check tolerance cm:3/1000s. : 7.5	
	CONTROL LEVER
Rated speed rpm : 475  Rack travel in mm : 7.20	<pre>control lever position degree : 102.0 tolerance degree : +- 4.0</pre>
Tolerance mm : + 0.10 + Del. quantity	RATED SPEED
cm3/1000 strokes : 60.0 + Tolerance +	rack travel mm : 11.90 Rated speed rpm : 1145
cm3/1000 strokes : +- 2.0 +- Check tolerance +- 2.1	Tolerance 1/min : + 5
cm3/1000s. : + 4.5 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1280 Tolerance 1/min : +- 15
cm3/1000 strokes : 5.0 + Check tolerance + cm3/1000s. : 9.0 +	rack travel mm : 0.85 Tolerance mm : +- 0.55
+	Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	LOW IDLE
GUIDE SLEEVE POSITION	control lever
control lever + position degree : - 3	position degree : 84.0 tolerance degree : + 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 475 rack travel mm : 6.70 Tolerance mm : +- 0.10
governor spring + pre-tension + click setting x : 3.75 +	Testing:
‡	Rated speed rpm : 475 rack travel mm : 7.20

Tolerance mm	: <b>←</b> 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 660 : +- 30
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.90 : + 0.05
Rated speed rom rack travel mm Tolerance mm	: 750 : 12.90 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.90 : + 0.05
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 8.60 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 900 : 11.10 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 560 : 9.60 : + 0.05
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1500 : 750
cm3/1000 strokes Tolerance cm3/1000 strokes	: 193.0 : +- 3.0
	<del>-</del>

Check tolerance cm3/1000s. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	12.0
cm3/1000s.	:	16.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +-	500 90.0 2.0 4.0

STARTING FUEL DEL	IVERY	
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: +-	100 20.25 0.75
cm3/1000 strokes Tolerance	:	165.0
cm3/1000 strokes Check tolerance	: +-	20.0
cm3/1000s.	: +-	25.0

LOW IDLE	
Rated speed rpm Del. quantity	: 475
cm3/1000 strokes Tolerance	: 60.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000S. Spreed Tolerance	: +- 4.5
cm3/1000 strokes Check tolerance	: 6.0
cm3/1000s.	: 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 25.02.97 : ISO 4113

Combination No. : 0 402 076 813

Injection pump

Pump designation : PES6P12OA1320/5RS338

EP type number : 0 412 026 802

Covernor

Governer design. : RSV350...1100P8A665

: 0 412 026 800 Governer no.

Cust. part No. : 1393870

Customer-spec. information Customer : SCANIA Motor : DSI9 46M

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm): 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure har : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance \*NW : **←** 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Paris + 2001 in 20 1 17 15	
Rack travel in mm: 13.45 Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 233.0	Rated speed rpm : 700 Aneroid pressure
Tolerance	hPa : 1500
cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 233.0 Tolerance
Check tolerance cm3/1000s. : + 7.0	cm3/1000 strokes : + 1.0 Check tolerance
Spreed	cm3/1000s. : + 7.0 Spreed Tolerance
Tolerance	cm3/1000 strokes : 8.0
cm3/1000 strokes : 8.0	Check tolerance
	cm3/1000s. : 12.0
Check tolerance tri3/1000s. : 12.0	
	CONTROL LEVER
Rated speed rpm : 350	control lever
Rack travel in mm: 3.30	position degree : 57.0
Rack travel in mm : 3.30 + Tolerance mm : + 0.10	tolerance degree : +- 4.0
Del. quantity	control lever
cm3/1000 strokes : 20.0	position degree : 107.0
Tolerance	tolerance degree : + 4.0
cm3/1000 strokes : +- 3.0	0.175. 0075.
Check tolerance + 6.0	RATED SPEED rack travel mm : 12.40
Spreed	Rated speed rpm : 1145
Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : 4.0	Check
Check tolerance	speed 1/min : + 10
cm3/1000s. : 8.0	rack travel mm : 4.00
I	Rated speed rpm : 1215
(B) SETTING OF INJECTION PUMP	Tolerance 1/min : +- 15
WITH GOVERNOR	Check
+	speed 1/min : + 20
	rack travel mm : 0.85
GUIDE SLEEVE POSITION	Tolerance mm : + 0.55
+	Rated speed rpm : 1350
+	
control lever	
position degree : - 3 + Rated speed rpm : 800 +	
Rated Speed 1 pill	LOW IDLE
Rack travel in mm: 0.50	
Tolerance mm : + 0.20	
+	control lever
governor spring + pre-tension +	position degree : 75.0 tolerance degree : + 4.0
click setting x : 6.00	toter differ degree . The 4.0
	control lever
+	position degree : 25.0

tolerance degree	: <b>←</b> 4.0
Setting point w/c	out bumper spring
Rated speed rpm rack travel mm Tolerance mm	: 350 : 2.80 : ← 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
rack travel mm Rated speed rpm Tolerance 1/min	: 440
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.45 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 13.45 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Toleranse mm	: 500 : 1500 : 13.45 : +- 0.05
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.50 : +- C.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 240 : 11.40 : + 0.15
Pressure hPa rack travel mm Tolerance mm	: 440 : 12.65 : ← 0.05
Start interlock	

FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1500 : 1100
Del. quantity cm3/1000 strokes Tolerance	: 211.0
cm3/1000 strokes Check tolerance	: + 4.0
cm3/1000s.	: +- 6.0
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance cm3/1000 strokes	: 165.0 : + 1.0
Check tolerance cm3/1000s.	; <del>+-</del> 5.0
STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 10.50 : + 0.30 : 150.0
LOW IDLE	
Rated speed rpm Del. quantity	: 350
cm3/1000 strokes Tolerance	: 20.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s. Spreed Tolerance	: +- 6.0
cm3/1000 strokes Check tolerance	: 4.0
cm3/1000s.	: 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.02.97 Test oil : ISO 4113

Combination No. : 0 402 746 6090

Injection pump

Pump designation : PES6P130A720RS7411

EP type number : 0 412 736 808

Governor

Governer design. : RQ275/950PA1274 Governer no. : 0 421 801 807

Cust. part No. : 221 575

Customer—spec. information Customer : RABA

Motor : siehe Bemerkung

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.50
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.10

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 263.0

Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 6.00
	+ Tolerance mm : +- 0.10
Check tolerance	
cm3/1000s. : +- 4.0	Rated speed rpm : 1290
(IID) (0003 4.0	
On a seed	+ guide sleeve
Spreed	+ travel mm : 11.50
	+ Tolerance mm : + 0.50
Tolerance	<del>†</del>
cm3/1000 strokes : 5.0	
	+ GUIDE SLEEVE POSITION
Check tolerance	+
cm3/1000s. : 9.0	+ Rated speed rpm : 1143
	+
	Rack travel in mm: 12.10
	Tolerance mm : + 1.30
Rated speed rpm : 275	
mada opeca i piii	
Rack travel in mm : 4.20	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.10	TOTAL TOTAL PETTACKI MI LOCK FOWN OLDE
Del. quantity	Rated speed rpm : 600
cm3/1000 strokes : 24.0	
	Aneroid pressure
Tolerance	+ hPa : 1500
cm3/1000 strokes : +- 3.0	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 263.0
$cm3/1000s.$ : $\leftarrow$ 6.0	† Tolerance
Spreed	+ cm3/1000 strokes : +- 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 8.0	+ cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : 12.0	+ Tolerance
	+ cm3/1000 strokes : 5.0
	+ Check tolerance
(B) SETTING OF INJECTION PUMP	+ cm3/1000s. : 9.0
WITH GOVERNOR	1 (110) (0000)
WITH GOACHAOK	I
GUIDE SLEEVE TRAVEL	CONTROL LEVER
GOIDE SEELAE IMPACE	T CONTROL ELVEN
Rated speed rpm : 1103	T control lever
guide sleeve	position degree : 34.0
travel mm : 6.54	tolerance degree : +- 4.0
Tolerance mm : + 0.15	T toterance degree 4.0
ioral dulca mili : 0.13	T control lever
Dated anned now 1 275	
Rated speed rpm : 275	+ position degree : 95.0
guide sleeve travel mm : 2.06	tolerance degree : +- 4.0
	1
Tolerance mm : +- 0.20	+ RATED SPEED
	track travel mm : 12.10
Rated speed rpm : 1050	+ Rated speed rpm : 1095
guide steeve	+ Tolerance 1/min : + 5
travel mm : 6.00	+
Tolerance mm : ← 0.10	+ rack travel mm : 4.00
	+ Rated speed rpm : 1190
Rated speed rpm : 355	+ Tolerance 1/min : + 15
guide sleeve	+
travel mm : 4.25	+ rack travel mm : 0.50
Tolerance mm : + 0.10	+ Tolerance mm : +- 0.50
र प्रमाणका विकास समाप्त । प्रमाणका प्रमाणका विकास समाप्त । प्रमाणका समाप्त । प्रमाणका समाप्त । प्रमाणका समाप्त	+ Rated speed rpm : 1300
0.4.4.4.4.4.4.4.4.4.4.4.4.60	1.000
RATED Sheed rom : 400	
Rated speed rpm : 450	'
Rated speed rpm : 450	'

LOW IDLE	
control lever	
position degree tolerance degree	: 73.0
tolerance degree	: +- 4.0
control lever	44.0
position degree tolerance degree	: 11.0
tolerance degree	: +- 4.0
Testing:	
Rated speed rpm	: 275
rack travel mm	: 4.20
Tolerance mm	: <del>+</del> 0.10
rack travel mm	
Rated speed rpm	
Tolerance 1/min	: → 20
Rated speed rpm	: 175
CRT mm min.	: > 6.80
rack travel mm Tolerance mm Rated speed rpm rack travel mm	
Tolerance mm	: ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm	: 500
Pressure hPa	: 1500 : 13.10 : + 0.05
rack travel mm	: 13.10
Tolerance mm	: <b>←</b> 0.05
Pressure hPa	
Rated speed rpm	: 500 : 8.20
rack travel mm Tolerance mm	: 8.20 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
•	

Pressure hPa rack travel mm Tolerance mm	: 380 : 9.85 : + 0.15
Pressure hPa rack travel mm Tolerance mm	: 600 : 12.05 : + 0.05
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 252.0
cm3/1000s.	: +- 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 20.50 : 110.0
LOW IDLE	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 275 : 24.0 : + 3.0 : + 6.0

Tolerance

cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.02.97 : ISO 4113

Combination No. : 0 403 474 021I

Injection pump

Pump designation : PES4MW100/720RS1181

EF type number : 0 413 404 017

Governor

Governer design. : RSV400...1000MW1A348

Governer no.

: 0 420 085 183

Cust. part No.

: 9880972

Customer-spec. information Customer : LIEBHERR

Motor

: D914TI

Power KW

: 125.0

## TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C

Tolerance °C

: + 2.0

Overflow valve

: 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar

Test lines

: 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm 3.05 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : ← 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : **←** 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 12.00

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 157.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

4.0 : +-

Spreed		+ Tolerance	
•		+ cm3/1000 strokes	: 4.0
Tolerance		+ Check tolerance	
cm3/1000 strokes	: 4.0	+ cm3/1000s.	: 7.5
Check tolerance		1	
cm3/1000s.	: 7.5	+	·
		+ CONTROL LEVER	
		control lever	
Rated speed rpm	: 550	position degree	• 96.0
riated speed (pin	. 230	tolerance degree	
Rack travel in mm	: 4.50	+	
Tolerance mm		+ RATED SPEED	
Del. quantity		rack travel mm Rated speed rpm	: 11.00
cm3/1000 strokes	: 25.9	+ Rated speed rpm	: 930
Tolerance		† Tolerance 1/min	: <del>+-</del> 5
cm3/1000 strokes Check tolerance	: +- 2.0	T made description	. / 00
cm3/1000s.	; <del>+</del> 4.5	+ rack travel mm + Rated speed rpm	
Spreed	* ' 7.2	Tolerance 1/min	
Tolerance		T TOCCIONE TANKIN	• • • • • • • • • • • • • • • • • • • •
cm3/1000 strokes	: 3.5	+ rack travel mm	: 1.00
Check tolerance		+ Tolerance mm	: +- 0.70
cm3/1000s.	: 5.0	+ Rated speed rpm	
		I rack travel man	: 4.00
(B) SETTING OF IN	JECTION PUMP	Rated speed rpm	
WITH GOVERNOR		1	, ,,,,,
		+	
		+	
GUIDE SLEEVE POSI	TION	LOW IDLE	
		I	
control lever		+ control lever	
position degree	: - 3	+ position degree	
Rated speed rpm	: 300	+ tolerance degree	: +- 4.0
Rack travel in mm Tolerance mm		Setting point w/o	out bumper spring
CCC GILC IIII	در. ن	Rated speed rpm	: 550
overnor spring		rack travel ma	
ore-tension		+ Tolerance mm	: +- 0.10
click setting x	: 4.75	+	
		Testing:	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm	: 550
		+ rack travel mm	: 4.50
	: 900	rack travel mm Tolerance mm	: + 0.20
Aneroid pressure	444	+	
hPa	: 1200	+ Rated speed rpm	: 100
Del. quantity	. 157.0	† cot	. > 40.50
cm3/1000 strokes Tolerance	: 157.0	+ CRT mm min.	: > 19.50
cm3/1000 strokes	· +- 10	I	
Check tolerance		TORQUE CONTROL	
cm3/1000s.	: +- 4.0	TOTALE CONTINUE	
Spreed		+ Rated speed rpm	: 900
		+ rack travel mm	

Rated speed rpm : rack travel mm :

900 12.00

Tolerance mm	: <b>+</b> 0.05	+ Aneroid pressure
		+ hPa : 1200
Rated speed rpm	: 500	+ Rated speed rpm : 600
rack travel mm	: 12.00	+ Del. quantity
Tolerance mm	: <b>+</b> 0.05	cm3/1000 strokes : 160.0 Tolerance
Rated speed rpm	: 600	+ cm3/1000 strokes : +- 2.0
rack travel mm		Check tolerance
Tolerance mm		+ cm3/1000s. : +- 5.0
		+ Aneroid pressure
ANEROID/ALTITUDE		+ hPa : -
COMPENSATOR TEST		+ Rated speed rpm : 550
		+ Del. quantity
ACTET 110		+ cm3/1000 strokes : 134.0
SETTING		+ Tolerance
Dahad award www		+ cm3/1000 strokes : +- 1.0
Rated speed rpm Pressure hPa		Check tolerance
rack travel mm	10.65	+ cm3/1000s. : $+-$ 4.0
Tolerance mm		Ī
local diffe limit	. += 0.03	
Pressure hPa	: 1200	STARTING FUEL DELIVERY
Rated speed rpm	. — – –	- STARTERS TOLL DELIVERT
rack travel mm	: 12.00	Rated speed rpm : 100
Tolerance mm	: +- 0.05	+ rack travel mm : 20.00
		+ Tolerance mm : +- 1.00
MEASUREMENT		+ Del. quantity
		+ cm3/1000 strokes : 135.0
Rated speed rpm	: 550	Tolerance
•		+ cm3/1000 strokes : + 5.0
Pressure hPa	: 530	+ Check tolerance
rack travel mm		+ cm3/1000s. : +- 8.3
Tolerance mm	: <del>+</del> 0.05	†
<b>5</b> l.m.		†
Pressure hPa	: 670 : 11.55	†
rack travel mm Tolerance mm	: + 0.10	LOW IDLE
TOVER BILLE HAIN	. +- 0.10	I LOW IDLE
Start interlock		Rated speed rpm : 550
7,		+ Del. quantity
		+ cm3/1000 strokes : 25.0
		Tolerance
FUEL DELIVERY CH	ARACTERISTICS	+ cm3/1000 strokes : +- 2.0
		+ Check tolerance
Aneroid pressure		+  cm3/1000s. : + 4.5
hPa	: 1200	+ Spreed
Rated speed rpm	: 500	+ Tolerance
Del. quantity	440.0	+ cm3/1000 strokes : 3.5
cm3/1000 strokes	: 149.0	+ Check tolerance
Tolerance	20	+ cm3/1000s. : 5.0
cm3/1000 strokes	: ← 2.0	†
Check tolerance cm3/1000s.	: <del>+</del> 5.0	Ť
Spreed	, <del>-</del> J.U	I
Tolerance		I
cm3/1000 strokes	: 6.0	End of test specification sheet
Check tolerance	. 5.0	TIM OF LEST SPECIFICATION SHEET
cm3/1000s.	: 9.0	1
· 10003.	. ,	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.02.97 Test oil : ISO 4113

Combination No. : 0 403 476 1120

Injection pump

Pump designation : PES6MW100/720RS1225

: 1

EP type number : 0 413 406 220

Governor

Governer design. : RSV400...1000MW1A338

Governer no. : 0 420 085 184

Cust. part No. : 9880790

Customer-spec, information Customer : LIEBHERR Motor : D 926 T-EA2

Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C : + 2.0 Tolerance °C

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.05 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.51 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

Phasing Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 12.45 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 132.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s.	: +- 4.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5
Rated speed rpm	: 400
Ruck travel in mm Tolerance mm Del. quantity	: 5.80 : + 0.10
cm3/1000 strokes Tolerance	: 17.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.0
(B) SETTING OF IN.	JECTION PUMP
GUIDE SLEEVE POSI	TION
GUIDE SLEEVE POSI	TION : - 3
GUIDE SLEEVE POSI  control lever position degree	TION : - 3 : 800
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm	: - 3 : 800 : 0.65 : + 0.35
GUIDE SLEEVE POSITO  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm governor spring pre-tension click setting x	: - 3 : 800 : 0.65 : + 0.35
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVER' Rated speed rpm Aneroid pressure	TION  : - 3 : 800 :
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVERY	TION  : - 3 : 800 :

Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 4.0 : 4.0 : 7.5			
CONTROL LEVER				
control lever position degree tolerance degree	: 86.0 : + 4.0			
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 11.45 : 930 : +- 5			
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 965 : + 10			
rack travel mm Tolerance mm Rated speed rpm	: 1.00 : ÷ 0.70 : 1100			
rack travel mm Rated speed rpm	: 4.00 : 970			
LOW IDLE				
control lever position degree tolerance degree	: 65.0 : + 4.0			
Setting point w/cut bumper spring				
Rated speed rpm rack travel mm Tolerance mm	: 400 : 5.00 : + 0.10			
Testing:				
Rated speed rpm rack travel mm Tolerance mm	: 400 : 5.80 : ← 0.10			
Rated speed rpm	: 100			

CRT mm min. : > 19.50

TORQUE CONTROL

	1	Charle Antonio
Rated speed rpm	: 900	Check tolerance cm3/1000s. : 9.0
rack travel mm	: 900 : 12.45	CIII 7 10003 9.0
	: + 0.05	Aneroid pressure
roter drice tiali	I	hPa : 950
Rated speed rpm	: 500	Rated speed rpm : 700
rack travel mm	: 12.45	Del. quantity
	: + 0.05	cm3/1000 strokes : 133.0
		Tolerance
Rated speed rpm	: 700	cm3/1000 strokes : +- 2.0
	: 12.45	Check tolerance
Tolerance mm	: +- 0.05	$cm3/1000s$ . : $\leftarrow$ 5.0
	+	
	+	Aneroid pressure
ANEROID/ALTITUDE	+	hPa : -
COMPENSATOR TEST	+	Rated speed rpm : 500
	+	Del. quantity
	+	cm3/1000 strokes : 124.0
SETTING	<del>†</del>	Tolerance
	+	cm3/1000 strokes : + 1.0
	: 500 +	Check tolerance
Pressure hPa	: +	cm3/1000s. : $+-$ 3.0
rack travel mm	: 12.35	
Tolerance mm	: + 0.05	
Danasina hDa	. 050	CTARTING FUEL RELIGION
Pressure hPa	: 950	STARTING FUEL DELIVERY
Rated speed rpm	: 500	Reted eneed non a 100
rack travel mm Tolerance mm	: 12.45 : + 0.10	Rated speed rpm : 100
roterance mm	: <del>- 0.10</del>	rack travel mm : 20.25 Tolerance mm : + 0.75
MEASUREMENT	Ţ	Del. quantity
MEASUREMENT	T	cm3/1000 strokes : 135.0
Rated speed rpm	: 500	Tolerance
Nated speed (pii	· 300	cm3/1000 strokes : +- 5.0
Pressure hPa	: 860	Check tolerance
rack travel mm	12.35	cm3/1000s. : +- 8.0
	+ 0.05	1. 0.0
TOTAL MAIN	1	
Pressure hPa	: 900	
rack travel mm	12.40	
	: + 0.10 +	LOW IDLE
	1	
Start interlock	1	Rated speed rpm : 400
	<del>}</del>	Del. quantity
	+	cm3/1000 strokes : 17.0
		Tolerance
FUEL DELIVERY CHARA	ACTERISTICS +	cm3/1000 strokes : + 2.0
	+	Check tolerance
Aneroid pressure	+	cm3/1000s. : +- 4.5
hPa :	: 950 +	Spreed
Rated speed rpm :	: 500 +	Tolerance
Del. quantity	122.2	cm3/1000 strokes : 3.5
cm3/1000 strokes :	: 128.0 +	Check tolerance
Tolerance		cm3/1000s. : 5.0
	: +- 2.0 +	
Check tolerance		
	: ← 5.0 †	
Spreed Tolerance	Ť	
cm3/1000 strokes :	: 6.0	End of test specification sheet
UND TOUC SCRUKES	. 0.0	End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.02.97 Test oil : ISO 4113

Combination No. : 0 403 476 1120

Injection pump

Pump designation : PESSMW100/72CRS1225

EP type number : 0 413 406 220

Governor

Governer design. : RSV400...1000MW1A338

: -1

: 0 420 085 184 Governer no.

Cust. part No. : 9880791

Customer-spec. information

Customer : LIEBHERR : D 926 T-EA2 Motor

Power KW : 164.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.51 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : +- 0.50

Check

: +- 0.75 tolerance \*NW

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 14.05 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 159.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.	: +- 4.0	+ Check tolerance + cm3/1000s. + Spreed	: +- 4.0
Spreed	We did to the late of the late	Tolerance cm3/1000 strokes	: 4.0
Tolerance cm3/1000 strokes	: 4.0	Check tolerance cm3/1000s.	: 7.5
Check tolerance cm3/1000s.	: 7.5	CONTROL LEVER	
		CONTROL LEVER	
Rated speed rpm	: 400	position degree tolerance degree	: 98.0 : + 4.0
Rack travel in mm		. +	
Tolerance mm	: +- 0.10	+ RATED SPEED	
Del. quantity	. 47.6	+ rack travel mm	: 13.05
cm3/1000 strokes Tolerance	: 17.0	+ Rated speed rpm + Tolerance 1/min	: 1040 : +- 5
cm3/1000 strokes	: +- 2.0	T focerance (/miss	, +- )
Check tolerance		rack travel mm	: 4.00
cm3/1000s.	: +- 4.5	Rated speed rpm	: 1085
Spreed		+ Tolerance 1/min	: + 10
Tolerance cm3/1000 strokes	: 3.5	T mark through the	. 1.00
Check tolerance	: 3.5	+ rack travel mm + Tolerance mm	: 1.00 : +- 0.70
cm3/1000s.	: 5.0	Rated speed rpm	: 1200
		t rack travel mm	: 4.00
(B) SETTING OF INJ WITH GOVERNOR	JECTION PUMP	Rated speed rpm	: 1090
GUIDE SLEEVE POSIT	TION	LOW IDLE	
control lever		control lever	
position degree	: - 3	+ position degree	
Rated speed rpm	: 800	tolerance degree	: +- 4.0
Rack travel in mm Tolerance mm		Setting point w/ou	. ,
		+ Rated speed rpm	
governor spring		rack travel mm Tolerance mm	5.00
pre-tension click setting x	: 2.25	T Toterance mm	· - 0.10
STICK SECURE A		Testing:	
FULL LOAD DELIVERY	AT FULL LOAD STOP	Rated speed rpm	
Rated speed rpm	: 1000	rack travel mm Tolerance mm	: 5.80 : +- 0.10
Aneroid pressure		10001 01100 11811	0.10
hPa	: 1200	Rated speed rpm	: 100
Del. quantity cm3/1000 strokes	: 159.5	CRT mm min.	: > 19.50
Tolerance	· <u> </u>	<u> </u>	
cm3/1000 strokes	. T- 1.U	TORQUE CONTROL	

Rated speed rpm rack travel mm		theck tolerance cm3/1000s.	: 9.0
Tolerance mm  Rated speed rpm	: <b>-</b> 0.05	Aneroid pressure hPa Rated speed rpm	: 1200 : 700
rack travel mm Tolerance mm		Del. quantity cm3/1000 strokes Tolerance	-
Rated speed rpm rack travel mm	: 14.05	cm3/1000 strokes	: +- 2.0
Tolerance mm	: <del></del> 0.05	cm3/1000s.	: +- 5.0
ANEROID/ALTITUDE COMPENSATOR TEST		+ Aneroid pressure + hPa Rated speed rpm Del. quantity	: – : 500
SETTING		cm3/1000 strokes Tolerance	
Rated speed rpm Pressure hPa	: 500	cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 3.0
rack travel mm Tolerance mm		‡	
Pressure hPa Rated speed rpm		STARTING FUEL DEL	IVERY
rack travel mm Tolerance mm		Rated speed rpm rack travel mm	: 100 : 20.25
MEASUREMENT		+ Tolerance mm + Del. quantity	: +- 0.75
Rated speed rpm	: 500	+ cm3/1000 strokes + Tolerance + cm3/1000 strokes	
Pressure hPa rack travel mm Tolerance mm	: 565 : 13.60 : + 0.10	Check tolerance cm3/1000s.	•
Pressure hPa rack travel mm	: 650 : 13.95	10115115	
Tolerance mm Start interlock	: <b>←</b> 0.05	+ LOW IDLE + Rated speed rpm	: 400
		+ Del. quantity + cm3/1000 strokes	
FUEL DELIVERY CHA	ARACTERISTICS	+ Tolerance + cm3/1000 strokes + Check tolerance	: +- 2.0
Aneroid pressure hPa Rated speed rpm	: 1200 : 500	cm3/1000s. Spreed Tolerance	: +- 4.5
Del. quantity cm3/1000 strokes		cm3/1000 strokes Check tolerance	
Tolerance cm3/1000 strokes Check tolerance	: ← 2.0	+ cm3/1000s.	: 5.0
cm3/1000S. Spreed Tolerance	: <b>←</b> 5.0	<u> </u>	
cm3/1000 strokes	: 6.0	+ End of test speci	fication sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.02.97 Test oil : ISO 4113

Combination No. : 0 403 476 1125

Injection pump

Pump designation : PES6MW100/720RS1225

EP type number : 0 413 406 220

Governor

Governer design. : RSV400...1000MW1A338

Governer no. : 0 420 085 184

Cust. part No. : 9880792

Customer-spec. information Customer : LIEBHERR : D 926 T-EA2 Motor

: 170.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.51 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: +- 0.50 Tolerance

Check

: +- 0.75 tolerance \*NW

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 15.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 167.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance	+ Check tolerance
cm3/1000s. : $+-$ 4.0	+  cm3/1000s. : +- 4.0
Canad	Spreed
Spreed	+ Tolerance + cm3/1000 strokes : 4.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 4.0	+ cm3/1000s. : 7.5
	. +
Check tolerance	+
cm3/1000s. : 7.5	CONTROL LEVED
	CONTROL LEVER
	+ control lever
Rated speed rpm : 500	position degree : 93.0
	+
Rack travel in mm: 5.80	+ RATED SPEED
Tolerance mm : + 0.10	+ rack travel mm : 14.15
Del. quantity cm3/1000 strokes : 17.0	+ Rated speed rpm : 930 + Tolerance 1/min : +- 8
Tolerance	Tolerance 1/min : +- 8
cm3/1000 strokes : +- 2.0	Track travel mm : 4.00
Check tolerance	+ Rated speed rpm : 985
cm3/1000s. : +- 4.5	+ Tolerance 1/min : +- 10
Spreed	+
Tolerance	+ rack travel mm : 1.00
cm3/1000 strokes : 3.5	+ Tolerance mm : +- 0.70
Check tolerance cm3/1000s. : 5.0	Rated speed rpm : 1100
. 5.0	Track travel mm : 4.00
	Rated speed rpm : 990
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	1
	+
GUIDE SLEEVE POSITION	LOW IDLE
GOINE OFFERE LOSILION	Ţ
	+ control lever
control lever	+ position degree : 70.0
position degree : - 3	†
Rated speed rpm : 800	+ Setting point w/out bumper spring
Rack travel in mm : 0.65	Rated speed rom : 500
	Rated speed rpm : 500 rack travel mm : 5.00
Tolerance mm : + 0.35	Rated speed rpm : 500 rack travel mm : 5.00 Tolerance mm : + 0.10
	rack travel mm : 5.00 Tolerance mm : + 0.10
Tolerance mm : + 0.35 governor spring pre-tension	† rack travel mm : 5.00
	rack travel mm : 5.00 Tolerance mm : + 0.10 Testing:
Tolerance mm : + 0.35 governor spring pre-tension	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500
Tolerance mm : + 0.35 governor spring pre-tension	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 900	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 900 Aneroid pressure	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500 rack travel mm : 5.80 Tolerance mm : + 0.10  Rated speed rpm : 100
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 900 Aneroid pressure hPa : 1200	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500 rack travel mm : 5.80 Tolerance mm : + 0.10
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 900 Aneroid pressure hPa : 1200 Del. quantity	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500 rack travel mm : 5.80 Tolerance mm : + 0.10  Rated speed rpm : 100
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 900 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 167.0	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500 rack travel mm : 5.80 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 900 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 167.0 Tolerance	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500 rack travel mm : 5.80 Tolerance mm : + 0.10  Rated speed rpm : 100
Tolerance mm : + 0.35  governor spring pre-tension click setting x : 2.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 900 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 167.0	rack travel mm : 5.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 500 rack travel mm : 5.80 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50

rack travel mm :	15.15	
Tolerance mm :	+- 0.05	Aneroid pressure
		hPa : 1200
Rated speed rpm :	500	Rated speed rpm : 700
rack travel mm : Tolerance mm :	15.15 + 0.05	Del. quantity cm3/1000 strokes : 167.0
Total affice that	T 1	Tolerance
Rated speed rpm :	700	cm3/1000 strokes : +- 2.0
	15.15	Check tolerance
Tolerance mm :	← 0.05 +	cm3/1000s. : +- 5.0
	+ -	
ANEROID/ALTITUDE		Aneroid pressure hPa : -
COMPENSATOR TEST	Ĩ	Rated speed rpm : 500
COLL CHOMICK TEDI	1	Del. quantity
	1	cm3/1000 strokes : 146.0
SETTING	+	Tolerance
make at a state of	<del></del>	cm3/1000 strokes : + 1.0
Rated speed rpm : Pressure hPa :	500 +	Check tolerance cm3/1000s. : +- 3.0
rack travel mm :	13.60 I	CIID/10003 — 3.0
Tolerance mm :	+ 0.10	
	+	
Pressure hPa :	1200	STARTING FUEL DELIVERY
Rated speed rpm : rack travel mm :	500 15.15	Rated speed rpm : 100
	+ 0.10	rack travel mm : 20.25
	1	Tolerance mm : + 0.75
MEASUREMENT	+	Del. quantity
- · · · · · · · · · · · · · · · · · · ·	<del></del>	cm3/1000 strokes : 135.0
Rated speed rpm :	500 +	Tolerance cm3/1000 strokes : +- 5.0
Pressure hPa :	650	cm3/1000 strokes : +- 5.0 Check tolerance
rack travel mm :	14.00	cm3/1000s. : +- 8.0
	+ 0.10 +	
	+	
Pressure hPa : rack travel mm :	800	
	+ 0.10	LOW IDLE
TO COT GITTO TIEM	-	
Start interlock	+	Rated speed rpm : 500
	+	Del. quantity
		cm3/1000 strokes : 17.0 Tolerance
FUEL DELIVERY CHARA	CTERISTICS	cm3/1000 strokes : +- 2.0
· emm - mbatmii Viiiliki	1	Check tolerance
Aneroid pressure	+	cm3/1000s. : +- 4.5
hPa :	1200	Spreed
Rated speed rpm :	500	Tolerance cm3/1000 strokes : 3.5
Del. quantity cm3/1000 strokes :	162.0	cm3/1000 strokes : 3.5 Check tolerance
Tolerance	1	cm3/1000s. : 5.0
cm3/1000 strokes :	<b>+</b> 2.0 <b>+</b>	
Check tolerance	+	
cm3/1000s. :	<b>←</b> 5.0 †	
Spreed Tolerance	Ĭ	
cm3/1000 strokes :	6.0	End of test specification sheet
Check tolerance	<del>}</del>	,
cm3/1000s. :	9.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.03.97 Test oil : ISO 4113

Combination No. : 0 400 864 100

Injection pump

Pump designation : PES4A95D410/3RS2905

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...900A1C859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1596 KY

Customer-spec. information

Customer : KHD-DMI

Motor : F4L912/913\_NEU

Power KW : 54.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerence °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	theck tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. 8.0	<u> </u>
	CONTROL LEVER
Rated speed rpm : 325	control lever position degree : 90.0 tolerance degree : + 4.0
Rack travel in mm : 7.90	+
Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity	rack travel mm : 10.80 Rated speed rpm : 895
cm3/1000 strokes : 11.5	+ Rated speed rpm : 895
Tolerance	+ Tolerance 1/min : + 5
cm3/1000 strokes : + 2.8	T made through my
Check tolerance cm3/1000s. : +- 4.5	+ rack travel mm : 4.00 + Rated speed rpm : 920
Spreed	Tolerance 1/min : + 10
Tolerance	+ Total and the strike in the
cm3/1000 strokes : 5.5	frack travel mm : 0.85
Check tolerance	+ Tolerance mm : + 0.55
cm3/1000s. : 9.0	+ Rated speed rpm : 1090
	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 940
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
position degree : FREE	position degree : 68.0
Rated speed rpm : 800	tolerance degree : + 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
	- Rated speed rpm : 325
governor spring	+ rack travel mm : 7.40
pre-tension	† Tolerance mm : + 0.10
click setting x : 2.50	+ Testing:
	+
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Rated speed rpm : 325
Datasi annud mm . OCO	rack travel mm : 7.90 Tolerance mm : + 0.10
Rated speed rpm : 850 Aneroid pressure	+ Tolerance mm : + U.7U
hPa : -	rack travel mm : 2.00
Del. quantity	+ Rated speed rpm : 415
cm3/1000 strokes : 80.0	+ Tolerance 1/min : + 30
Tolerance	T Dated and a second as
cm3/1000 strokes : + 1.0	Rated speed rpm : 100
Check tolerance cm3/1000s. : + 3.0	+ CRT mm min. : > 19.50
Spreed	- CAT ONLY (0141)
Tolerance	
cm3/1000 strokes : 3.5	+ TORQUE CONTROL
	+

Rated speed rpm : 850 rack travel mm : 11.80 Tolerance mm : + 0.05

Rated speed rpm : 500

Start interlock

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 : **←** 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LCW IDLE

Rated speed rpm : 325 Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.03.97 Test oil : ISO 4113

Combination No. : 0 400 864 101

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1250A5c860L

Governer no. : 0 420 232 623

Cust. part No. : 0423 1788 KY

Customer-spec. information Customer : KHD-DMI

Motor : F4L912/913\_NEU

Power KW : 59.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	theck tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. 8.0	
	CONTROL LEVER
Dahad saad aa 205	control lever
Rated speed rpm : 325	position degree : 102.0 tolerance degree : + 4.0
Rack travel in mm: 8.50	+
Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity	+ rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance	+ Tolerance 1/min : + 5
cm3/1000 strokes : +- 2.0	
Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.5	Rated speed rpm : 1339
Spreed	Tolerance 1/min : +- 15
Tolerance	T roterance rymin : + (5
cm3/1000 strokes : 5.5	T made through my c 0.05
	rack travel mm : 0.85
Check tolerance	+ Tolerance mm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1510
	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 4.00
WITH GOVERNOR	T Rated speed rpm : 1300
GUIDE SLEEVE POSITION	LOW IDLE
control lever	- control lever
position degree : FREE	position degree : 69.0
Rated speed rpm : 800	+ tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
	+ Rated speed rpm : 325
governor_spring	+ rack travel mm : 8.00
pre-tension	+ Tolerance mm : + 0.10
click setting x : 3.00	+
	+ Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325
· प्रकृष्ण करणाव व्यवस्थित स्थापः ।।। । व्यवस्थित स्थापः व्यवस्था	+ rack travel mm : 8.50
Rated speed rpm : 1250	+ Tolerance mm : + 0.10
Aneroid pressure	Tocal direction . The O. IO
hPa : ~	Frack travel mm : 2.00
Del. quantity	+ Rated speed rpm : 473
cm3/1000 strokes : 76.0	Tolerance 1/min : + 30
Tolerance	† 2
cm3/1000 strokes : + 1.0	+ Rated speed rpm : 100
Check tolerance	†
cm3/1000s. : + 3.0	+ CRT mm min. : > 19.50
Spreed	+
Tolerance	+
cm3/1000 strokes : 3.5	+ TORQUE CONTROL

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

750 Rated speed rpm

Start interlock

# STARTING FUEL DELIVERY

Rated speed rpm 100 20.25 rack travel mm Tolerance num : + 0.75Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

9.0 cm3/1000s.

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 05.03.97 : ISO 4113

Combination No. : 0 400 865 029

Injection pump

Pump designation : PES5A95D410/3RS2906

EP type number : 0 410 895 971

Governor

Governer design. : RSV325...900A1C859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1599 KY

Customer-spec. information : KHD-DMI

Customer Hotor

: F5L912/913\_NEU

Power KW

: 67.5

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance \*C

2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar

Test lines

: 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm Tolerance mm 3.00 : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-3-5-4-2

: 0-72-144-216-288 Phasing

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes :

70.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: + 3.0

Spreed

Tolerance +	
cm3/1000 strokes : 3.5	
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
	control lever
	position degree : 89.0
+	tolerance degree : +- 4.0
Rated speed rpm : 325	
3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	RATED SPEED
Rack travel in mm: 8.60	rack travel mm : 10.50
Del. quantity + cm3/1000 strokes : 11.5	Rated speed rpm : 895 Tolerance 1/min : + 5
Tolerance	Toterance Thirth . The S
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 920
cm3/1000s. : + 4.5	Tolerance 1/min : + 10
Spreed, +	
Tolerance + cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : +- 0.55 Rated speed rpm : 1090
cm3/1000s. : 9.0	Rated Speed (pill : 1070
	rack travel mm : 4.00
+	Rated speed rpm : 940
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	
I	
	LOW IDLE
GUIDE SLEEVE POSITION +	
+	
t de la combinat de l	control lever
control lever + position degree : FREE +	position degree : 67.0 tolerance degree : + 4.0
Rated speed rpm : 800	toterence degree 4.0
+	Setting point w/out bumper spring
Rack travel in mm: 0.50	
Tolerance mm : + 0.20	Rated speed rpm : 325
†	rack travel mm : 8.10
governor spring + pre-tension +	Tolerance mm : +- 0.10
click setting x : 2.25	Testing:
-	. 900 11131
	Rated speed rpm : 325
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 8.60
Rated speed rpm : 850	rack travel mm : 2.00
Rated speed rpm : 850 + Aneroid pressure +	Rated speed rpm : 420
hPa : -	Tolerance 1/min : +- 30
Del. quantity	
cm3/1000 strokes : 70.0	Rated speed rpm : 100
Tolerance	
cm3/1000 strokes : + 1.0	CRT mm min. :> 19.50
Check tolerance + 3.0 +	
Spreed	TORQUE CONTROL
Tolerance	
cm3/1000 strokes : 3.5	Rated speed rpm : 850
Charle delenance	
Check tolerance + cm3/1000s. : 8.0 +	rack travel mm : 11.80 Tolerance mm : +- 0.05

500 Rated speed rpm :

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 20.25 : +- 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. : + 10.0

## LOW IDLE

325 Rated speed rpm

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

2.0 cm3/1000 strokes : +-

Check tolerance

cm3/1000s. 4.5

Spreed

Tolerance

cm3/1000 strokes :

5.5

Check tolerance

cm3/1000s.9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 03.03.97

Test oil

Combination No. : 9 400 030 708FS

Injection pump

Pump designation : PES6A100D320/3RS3506

EP type number : 9 410 037 236

Governor

Governer design. :

Governer no.

Cust. part No. : TATA-CUMMINS

Customer-spec. information

Customer : CUMMINS

Motor

: 6BT - 125 ps

TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve

: 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar

: + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

3.60 Prestroke mm

Tolerance mm

: +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm :  $\leftarrow$  1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

Start of delivery blocking

\*NW after s.o.d. : 5.75 : + 0.10Tolerance

Check

tolerance \*NW : + 0.29

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 10.30 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes :

78.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s.	: + 3.0
Spreed	
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 6.0
Rated speed rpm	: 400
Rack travel in mm Tolerance mm	6.40 : + 0.10
Del. quantity cm3/1000 strokes	: 10.0
Tolerance cm3/1000 strokes Check tolerance	: + 3.0
cm3/1000S. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	
	: 4.5
Check tolerance cm3/1000s.	: 4.5
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR	: 5.5  JECTION PUMP
cm3/1000s.  (B) SETTING OF IN	: 5.5  JECTION PUMP
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVERSE Speed rpm guide sleeve	: 5.5  JECTION PUMP  /EL  : 1347
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVERSE Rated speed rpm	: 5.5  JECTION PUMP
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	: 5.5  NECTION PUMP  /EL  : 1347  : 8.48
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm	: 5.5  NECTION PUMP  /EL  : 1347  : 8.48 : + 0.15
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVERSTE	: 5.5  NECTION PUMP  /EL  : 1347  : 8.48 : + 0.15  : 400  : 1.71
Cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVERSE	: 5.5  IJECTION PUMP  /EL  : 1347  : 8.48 : + 0.15  : 400  : 1.71 : + 0.20
Cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVER Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm  Rated speed rpm  Rated speed rpm	: 5.5  JECTION PUMP  /EL  : 1347  : 8.48 : + 0.15  : 400  : 1.71 : + 0.20 : 880 : 4.97
Cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVER Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Tolerance mm  Tolerance mm	: 5.5  JECTION PUMP  /EL  : 1347  : 8.48 : + 0.15 : 400  : 1.71 : + 0.20 : 880  : 4.97 : + 0.25
Cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVER Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm	: 5.5  JECTION PUMP  /EL  : 1347  : 8.48 : + 0.15  : 400  : 1.71 : + 0.20  : 880  : 4.97 : + 0.25  : 499  : 2.75

Tolerance mm	: +- 0.25
Rated speed rpm guide sleeve	: 560
travel mm Tolerance mm	: 3.37 : + 0.25
Rated speed rpm	: 1620
guide sleeve travel mm Tolerance mm	: 11.50 : + 0.50
GUIDE SLEEVE POSI	TION
Rated speed rpm	: 1250
Rack travel in mm Tolerance mm	: 16.00 : + 1.30
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure	: 1250
hPa Del. quantity	: -
cm3/1000 strokes Tolerance	: 78.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s. Spreed	: ← 3.0
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 6,0
CONTROL LEVER	
control lever position degree tolerance degree	: 61.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 9.30 : 1335 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1430 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1490

			rack travel mm Tolerance mm	: 10.30 : +- 0.10
LOW IDLE		Ŧ		. 1 0.10
		<u> </u>	Start interlock	
control lever		+	Rated speed rpm	: > 120
position degree tolerance degree		‡	Rated speed rpm	: < 300
		+	Check	
Testing:		1	speed 1/min Check	: > 100
Rated speed rpm		1	speed 1/min	: < 340
rack travel mm		†		
Tolerance mm	: +- 0.10	1	FUEL DELIVERY CHA	ARACTERISTICS
rack travel mm	: 2.00		TOLL DECIVERY OF	MACTERIO 1200
Rated speed rpm		+	Aneroid pressure	
Tolerance 1/min	: ← 30	†	hPa	: -
Data dana ada ana	. 100	†	Rated speed rpm	: 550
Rated speed rpm	: 100	Ī	Del. quantity cm3/1000 strokes	: 60.2
CRT mm min.	: > 9.00	I	Tolerance	. 00.2
Ott their their to		1	cm3/1000 strokes	: +- 2.0
		<del> </del>	Check tolerance	
TORQUE CONTROL		+	cm3/1000s.	: +- 3.5
		+	Spreed	
Rated speed rpm		†	Tolerance	
rack travel mm		†	cm3/1000 strokes Check tolerance	: 8.0
Tolerance mm	; +- 0.05	I	cm3/1000s.	: 10.0
Rated speed rom	: 550	- ↓	(110) (000).	
Rated speed rpm rack travel mm	: 10.30	1	Aneroid pressure	
Tolerance mm		+	hPa	: -
		+	Rated speed rpm	: 750
Rated speed rpm	: 750	+	Del. quantity	70.0
rack travel mm	: 10.30	†	cm3/1000 strokes Tolerance	: 70.0
Tolerance mm	: +- 0.15	Ī	cm3/1000 strokes	: <b>←</b> 2.0
		I	Check tolerance	2.0
ANEROID/ALTITUDE		1	cm3/1000s.	: <del>+-</del> 3.5
COMPENSATOR TEST		+	Spreed	
		+	Tolerance	
		+	cm3/1000 strokes	: 8.0
SETTING		†	Check tolerance	: 10.0
Rated speed rpm	: 800	Ī	cm3/1000s.	: 10.0
Pressure hPa	: 1000	I		
rack travel mm	: 10.30	+		<del></del>
Tolerance mm	: ← 0.10	+	STARTING FUEL DEL	.IVERY
Pressure hPa		İ	Rated speed rpm	: 100
Rated speed rpm	: 800	Ţ	rack travel mm	
rack travel mm		1	Tolerance mm	
Tolerance mm	: +- 0.10	+	Del. quantity	
		+	cm3/1000 strokes	: 97.0
MEASUREMENT		+	Tolerance	
0-4-4	: 800	†	cm3/1000 strokes Check tolerance	; <del>+-</del> 8.0
Rated speed rpm	: 800	I	cm3/1000s.	: <del>+-</del> 10.0
Pressure hPa	: 500	+		

# LOW IDLE

Rated speed rpm Del. quantity	:	400
cm3/1000 strokes	:	10.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.	: +-	4.5
Spreed Tolerance		
cm3/1000 strokes	:	4.5
Check tolerance cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 28,02,97 Edition : ISO 4113 Test oil

Combination No. : F 002 A0Z 006

Injection pump

Pump designation : PES4A95D320/3RS2880

EP type number : 9 410 037 214

Governor

Governer design. : RSV475...1100A0C880R

Governer no. : F 002 A20 206

Cust. part No. : 3930154

Customer-spec. information Customer : CDC : 4BT3.9 Motor Power KW : 63.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : ← 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

: **←** 0.50 Tolerance Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

\*NW after s.o.d. : 6.50 Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 11.45 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 95.0

H06

Tolerance		<pre>Del. quantity</pre>	
cm3/1000 strokes	: +- 1.0	cm3/1000 strokes Tolerance	
		+ cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: <del></del> 3.0	theck tolerance cm3/1000s.	: + 3.0
Spreed	<del></del>	+ Spreed + Tolerance + cm3/1000 strokes	: 4.0
Tolerance		Check tolerance	. 7.0
cm3/1000 strokes	: 4.0	cm3/1000s.	: 6.5
Check tolerance cm3/1000s.	: 6.5	CONTROL LEVER	
Rated speed rpm	: 475	control lever position degree	: 106.0
		tolerance degree	
Rack travel in mm		+	
Tolerance mm	: <b>←</b> 0.10	+ RATED SPEED	45 :-
Del. quantity		+ rack travel mm	: 10.40
cm3/1000 strokes	: 20.5	+ Rated speed rpm	
Tolerance cm3/1000 strokes	: + 2.0	† Tolerance 1√min	: +- 5
Check tolerance	: <del>←</del> 2.0	T rack travel mm	: 6.00
cm3/1000s.	: <del>+-</del> 4.5	Rated speed rpm	
Spreed	• +- 4.5	+ Tolerance 1/min	
Tolerance		1 roter direct 17 mills	• •
cm3/1000 strokes	: 6.0	+ rack travel mm	: 0.89
Check tolerance		+ Tolerance mm	: +- 0.55
cm3/1000s.	: 8.0	+ Rated speed rpm	: 1400
		<b>†</b>	: 6.00
		+ rack travel mm	
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	Rated speed rpm	
WITH GOVERNOR			
WITH GOVERNOR  GUIDE SLEEVE POSI		Rated speed rpm	
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree	TION : FREE	Rated speed rpm  LOW IDLE  control lever position degree	: 1230 : 86.0
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree	TION : FREE	Rated speed rpm  LOW IDLE  control lever	: 1230 : 86.0
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm	TION : FREE : 800 : 0.50	Rated speed rpm  LOW IDLE  control lever position degree tolerance degree  Control lever dif	: 1230 : 86.0 : + 4.0
WITH GOVERNOR  GUIDE SLEEVE POSIT  control lever position degree Rated speed rpm  Rack travel in mm  Tolerance mm	TION : FREE : 800 : 0.50	LOW IDLE  control lever position degree tolerance degree	: 1230 : 86.0 : + 4.0
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring	TION : FREE : 800 : 0.50	Rated speed rpm  LOW IDLE  control lever position degree tolerance degree  Control lever differad tolerance degree	: 1230 : + 86.0 : + 4.0 fference : 20.0 : + 4.0
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension	TION  : FREE : 800 : 0.50 : \to 0.20	Rated speed rpm  LOW IDLE  control lever position degree tolerance degree  Control lever differed	: 1230 : + 86.0 : + 4.0 fference : 20.0 : + 4.0
WITH GOVERNOR  GUIDE SLEEVE POSIT  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm	TION  : FREE : 800 : 0.50 : \to 0.20	Rated speed rpm  LOW IDLE  control lever position degree tolerance degree  Control lever differand tolerance degree  Setting point w/o	: 1230 : + 4.0 : + 4.0 fference : 20.0 : + 4.0
GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension	TION  : FREE : 800 : 0.50 : \to 0.20	Rated speed rpm  LOW IDLE  control lever position degree tolerance degree  Control lever differance degree  Setting point w/o	: 1230 : 86.0 : + 4.0 fference : 20.0 : + 4.0 out bumper s : 475
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre-tension click setting x	TION  : FREE : 800 : 0.50 : \to 0.20	Rated speed rpm  LOW IDLE  control lever position degree tolerance degree  Control lever differand tolerance degree  Setting point w/o	: 1230 : 86.0 : + 4.0 fference : 20.0 : + 4.0 out bumper s : 475
WITH GOVERNOR  GUIDE SLEEVE POSI  control lever position degree Rated speed rpm  Rack travel in mm Tolerance mm  governor spring pre—tension click setting x	TION  : FREE : 800 : 0.50 : + 0.20  : 4.50  Y AT FULL LOAD STOP	Rated speed rpm  LOW IDLE  control lever position degree tolerance degree  Control lever differance degree  Setting point w/o  Rated speed rpm rack travel mm	: 1230 : 86.0 : + 4.0 fference : 20.0 : + 4.0 out bumper s : 475 : 5.10

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 95.0 : ← 1.0 : ← 3.0 : 4.0 : 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 106.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 10.40 : 1155 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 6.00 : 1230 : + 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1400
rack travel mm Rated speed rpm	: 6.00 : 1230
LOW IDLE	
control lever position degree tolerance degree	: 86.0 : + 4.0
Control lever diff Grad tolerance degree	: 20.0
Setting point w/ou	ut bumper spring
Rated speed rpm rack travel mm Tolerance mm	: 475 : 5.10 : +- 0.10
Testing:	
Detect amond ann	. /75

Tolerance man : + 0.102.00 rack travel mm Rated speed rpm 575 Tolerance 1/min 30 100 Rated speed rpm CRT mm min. : > 19.00 TORQUE CONTROL

1100 Rated speed rpm 11.45 rack travel mm Tolerance mm : **←** 0.05

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm 100 20.50 rack travel mm : : + 0.50Tolerance mm Del. quantity cm3/1000 strokes : 122.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : + 15.0

## LOW IDLE

475 Rated speed rpm Del. quantity cm3/1000 strokes : 20.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance 8.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.11.96 Test oil : 180 4113

Combination No. : 0 402 034 701

Injection pump

Pump designation : PES4P120B120RS3379

EP type number : 0 412 024 702

Governor

Governer design. : RQV475...1250PA1316K

Governer no. : 0 421 815 544

Cust, part No. : 3928600

Customer-spec. information Customer : CDC : 4BTA-A Motor : 97.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C 40

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

: 0-90-180-270 Phasing

Phasing Tolerance : +- 0.30

Check

: **←** 0.75 tolerance \*NW

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.55 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 143.0

	1 2 4 1 2 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4
Tolerance	+ Rated speed rpm : 1660 + guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 13.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : +- 4.0	‡ ————————————————————————————————————
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Talamana	+ Rated speed rpm : 1250
Tolerance cm3/1000 strokes : 8.0	Aneroid pressure hPa : 1200 Del. quantity
Check tolerance cm3/1000s. : 12.0	cm3/1000 strokes : 143.0
	cm3/1000 strokes : + 1.0 Check tolerance
Rated speed rpm : 475	cm3/1000s. : +- 4.0 Spreed
	Tolerance
Rack travel in mm: 5.50	+ cm3/1000 strokes : 8.0
Tolerance mm : + 0.10	+ Check tolerance
Del. quantity cm3/1000 strokes : 26.5	$\pm$ cm3/1000s. : 12.0
Tolerance	Ī
cm3/1000 strokes : + 3.0	+
Check tolerance	+ CONTROL LEVER
cm3/1000s. : +- 5.0	†
Spreed Tolerance	control lever position degree : 117.0
cm3/1000 strokes : 4.0	tolerance degree : + 4.0
Check tolerance	+
cm3/1000s. : 8.0	+ RATED SPEED
	+ rack travel mm : 10.50
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1315 + Tolerance 1/min : + 15
WITH GOVERNOR	Toterance min . +- 13
WITH GOVERNOR	rack travel mm : 6.00
	Rated speed rpm : 1390
GUIDE SLEEVE TRAVEL	Tolerance 1/min : + 5
Rated speed rpm : 1313	rack travel mm : 0.50
guide sleeve	+ Tolerance mm : + 0.50
travel mm : 9.12	Rated speed rpm : 1500
Tolerance mm : +- 0.15	‡
Rated speed rpm : 475 guide sleeve	
travel mm : 1.59	+ LOW IDLE
Tolerance mm : + 0.20	1
Rated speed rpm : 985	control lever
guide sleeve	position degree : 73.0
travel mm : 6.26	tolerance degree : +- 4.0
Tolerance mm : +- 0.25	+ Control lever difference
Rated speed rpm : 680	+ Grad : 44.0
guide steeve	tolerance degree : +- 6.0
travel mm : 3.62	+
Tolerance mm : +- 0.25	+ Testing:

Rated speed rpm	: 475	+ Check
rack travel mm	5.50	+ speed 1/min : < 385
Tolerance mm	· + 0.10	1
TOTAL GIVE IMI	0.10	
Rated speed rpm		FUEL DELIVERY CHARACTERISTICS
rated speed par	. 400	TOEL DELIVERY CHARACTERISTICS
CRT mm min.	. \ 4 00	T Anamaid management
CKI mm min.	: > 0.00	+ Aneroid pressure + hPa : 1200
	FFO	
Rated speed rpm	: 550	Rated speed rpm : 750
		+ Del. quantity
TORQUE CONTROL		+ Tolerance
		+ cm3/1000 strokes : + 3.0
Rated speed rpm	: 1250	+ Check tolerance
rack travel mm	: 11.55	+ cm3/1000s. : +- 6.0
rack travel mm Tolerance mm	: +- 0.05	Spreed
		Tolerance
Pated speed rom	• 750	+ cm3/1000 strokes : 8.0
Rated speed rpm rack travel mm Tolerance mm	. 11 20	Check tolerance
Talamana am		
loterance mm	: +- 0.20	+ cm3/1000s. : 12.0
		†
Rated speed rpm	: 550	+ Aneroid pressure
rack travel mm	: 10.80	+ hPa : -
Tolerance mm	: <b>←</b> 0.20	+ Rated speed rpm : 1250
		+ Del. quantity
ANEROID/ALTITUDE		→ Tolerance
COMPENSATOR TEST		+ cm3/1000 strokes : $+$ 1.0
		+ Check tolerance
		+ cm3/1000s. : + 3.0
SETTING		I (115) 10000:
SELLTING		T
5-4-4	4250	Ť
Rated speed rpm Pressure hPa	: 1250	ATABITMO FUEL ASI TUGOV
Pressure nPa	: 1200	+ STARTING FUEL DELIVERY
		†
Pressure hPa	: -	+ Rated speed rpm : 100
Rated speed rpm	: 1250	rack travel mm : 21.00
rack travel mm	: 9.45	+ Tolerance mm : + 0.50
Tolerance mm	: +- 0.20	+ Del. quantity
		+ cm3/1000 strokes : 176.0
MEASUREMENT		+ Tolerance
		+ cm3/1000 strokes : $+$ 20.0
Rated speed rpm	: 1250	+ Check tolerance
Hates speed ipil		+ cm3/1000s. : +- 25.0
Pressure hPa	: 800	
rack travel mm	10.50	I
		Ţ
Tolerance mm	: <b>←</b> 0.20	Ť
- 15		LOUITNIC
Pressure hPa	: 680	+ LOW IDLE
rack travel mm	: 9.85	†
Tolerance mm	: <del> 0.20</del>	+ Rated speed rpm : 475
		+ Del. quantity
Start interlock		+ cm3/1000 strokes : 26.5
		+ Tolerance
Rated speed rpm	: > 100	+ cm3/1000 strokes : + 3.0
Rated speed rpm		+ Check tolerance
	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	+ cm3/1000s. : +- 5.0
Check		Spreed
speed 1/min	: > 80	Tolerance
speed 1/min	· / OU	+ cm3/1000 strokes : 4.0
		T CHO/ (UUU SCITORES : 4.U

Check tolerance cm3/1000s.	:	8.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.02.97 Edition Test oil : ISO 4113

Combination No. : 0 402 066 702

Injection pump

Pump designation : PES6P110A120RS3336 : 0 412 016 751 EP type number

Governor

Governer design. : RSV550...1100P2A586

: 0 421 833 480 Governer no.

Cust. part No. : 3926887

Customer-spec. information : CDC Customer Motor : 6CTA Power KW : 194.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : .2 417 413 093

2.0 Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: + 1.5 Tolerance bar

Test Lines : 1 680 750 015

Outside diameter :

x inside diameter : 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: +- 0.30 Tolerance

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.00

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

travel 15.00 Difference \* CS : 1.50

BASIC SETTING

Rated speed rpm	: 1100	+++++
Rack travel in mm Tolerance mm	: 14.25 : + 0.05	+
Del. quantity cm3/1000 strokes	: 190.0	<u>†</u>
Tolerance cm3/1000 strokes	: + 1.0	1
Check tolerance cm3/1000S.	: + 3.0	1
Spreed		+
Tolerance cm3/1000 strokes	: 8.0	++++
Check tolerance cm3/1000s.	: 12.0	++++
		‡
Rated speed rpm	: 550	<u>†</u>
Rack travel in mm Tolerance mm	: 5.10 : +- 0.10	+
Del. quantity cm3/1000 strokes	: 26.5	1
Tolerance cm3/1000 strokes	: <del>+-</del> 2.0	+
Check tolerance		Ŧ
cm3/1000s. Spreed	: <del>+-</del> 4.5	‡
Tolerance cm3/1000 strokes	: 4.0	‡
Check tolerance cm3/1000s.	: 6.5	Ì
CHD/ TOUCS.	. 0.5	Ŧ
(B) SETTING OF INWITH GOVERNOR	JECTION PUMP	† † †
GUIDE SLEEVE POSI	TION	+
control lever position degree Rated speed rpm	: - 3 : 800	++++
Rack travel in mm Tolerance mm	: 0.50 : + 0.20	T + + + + + + + + + + + + + + + + + + +

+	governor spring
†	pre-tension click setting x : 3.00
Ī	click setting $x : 3.00$
I	
1	FULL LOAD DELIVERY AT FULL LOAD STOP
+	
+	Rated speed rpm : 1100
†	Aneroid pressure hPa : 1500
I	Del. quantity
1	cm3/1000 strokes : 190.0
+	Tolerance
+	cm3/1000 strokes : +- 1.0
+	Check tolerance
†	cm3/1000s. : +- 3.0
Ī	Spreed Tolerance
I	cm3/1000 strokes : 8.0
1	Check tolerance
+	cm3/1000s. : 12.0
+	
+	
Ī	CONTROL LEVER
I	COMMON TEACH
1	control lever
+	position degree : 96.0
+	tolerance degree : +- 4.0
+	0.4750 0.0550
†	RATED SPEED rack travel mm : 13.25
Ι	rack travel mm : 13.25 Rated speed rpm : 1185
I	Tolerance 1/min : +- 5
į.	
+	rack travel mm : 7.80
+	Rated speed rpm : 1235
+	Tolerance 1/min : +- 5
†	nock though the 1 0 95
Ι	rack travel mm : 0.85 Tolerance mm : + 0.55
I	Rated speed rpm : 1390
+	The state of the s
+	
+	
†	LOUIDNE
I	LOW IDLE
I	
+	control lever
+	position degree : 74.0
+	tolerance degree : +- 4.0
†	Control loven difference
İ	Control lever difference Grad : 22.0
I	tolerance degree : +- 4.0
1	Total alloc augi ou i . Tro
+	Setting point w/out bumper spring
+	
+	Rated speed rpm : 550

rack travel mm : 4.60 Testing: Rated speed rpm 550 5.10 rack travel mm : + 0.10Tolerance mm Rated speed rpm 100 CRT mm min. : > 19.00 TORQUE CONTROL Rated speed rpm 1100 14.25 rack travel mm : + 0.05 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 1000 1500 Pressure hPa Pressure hPa 1000 Rated speed rpm 11.10 rack travel mm : Tolerance mm : +- 0.20 MEASUREMENT 1000 Rated speed rpm 995 Pressure hPa 13.45 rack travel mm Tolerance mm : +- 0.20 655 Pressure hPa : 12.05 rack travel mm : + 0.20Tolerance mm Start interlock FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 1000 Rated speed rpm Del. quantity

Check tolerance : +- 3.0 cm3/1000s. STARTING FUEL DELIVERY 100 Rated speed rpm rack travel mm 21.00 Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance cm3/1000s. : +- 25.0 LOW IDLE Rated speed rpm 550

Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 6.5

End of test specification sheet

Tolerance

cm3/1000 strokes :

cm3/1000 strokes :  $\leftarrow$  1.0

123.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 03.03.97

Test oil

: ISO 4113

Combination No. : 0 402 076 755

Injection pump

Pump designation : PES6P110A320LS3318

EP type number : 0 412 016 741

Governor

Governer design. : RSV350...750P4A561

Governer no.

: 0 421 833 406

Cust. part No.

: 1820271c92

Customer-spec. information

Customer Motor

: NAVISTAR : DTA-466

Power KW

: 185.0

#### TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C

40

Tolerance °C

: + 2.0

Overflow valve : 1 417 413 076

Inlet press. bar :

2.8

Tolerance bar

: + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 015

Outside diameter :

6.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : + 1.0

Prestroke mm 3.00

Tolerance mm : + 0.05

Check

: + 0.10tolerance mm

Rack travel in mm: 10.50

: +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

Tolerance : +- 0.30

Check

tolerance \*NW : + 0.75

Start of delivery blocking

Tolerance : + 0.50

Check

tolerance \*NW : + - 0.75

Barrel no.

: 1

BASIC SETTING

Rated speed rpm :

700

Rack travel in mm: 12.85

Tolerance mm

: +- 0.05

Del. quantity

cm3/1000 strokes : 219.0

H16

Tolerance	→ Tolerance
cm3/1000 strokes : + 1.0	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
Check tolerance	+ cm3/1000s. : + 3.0
cm3/1000s. : +- 3.0	+ Spreed
	+ Tolerance
Spreed	- cm3/1000 strokes : 4.0
	+ Check tolerance
Tolerance	- cm3/1000s. : 6.5
cm3/1000 strokes : 4.0	-
	<del> </del>
Check tolerance	
cm3/1000s. : 6.5	
	+
	position degree : 42.0
Rated speed rpm : 350	tolerance degree : +- 4.0
·	+
Rack travel in mm : 5.70	+ RATED SPEED
Tolerance mm : ← 0.10	rack travel mm : 11.50
Del. quantity	+ Rated speed rpm : 755
cm3/1000 strokes : 40.0	+ Tolerance 1/min : + 5
Tolerance	+
cm3/1000 strokes : +- 2.0	+ rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 795
cm3/1000s. : +- 4.5	+Tolerance 1/min: +-5
Spreed	+
Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 8.0	→ Tolerance mm : ← 0.55
Check tolerance	+ Rated speed rpm : 900
cm3/1000s. : 12.0	+
	† rack travel mm : 4.00
	+ Rated speed rpm : 800
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+
	<b>♦</b>
	+
	+ LOW IDLE
GUIDE SLEEVE POSITION	†
	†
	+ control lever
control lever	+ position degree : 22.0
position degree : - 3	† tolerance degree : +- 4.0
Rated speed rpm : 800	† <sub>****</sub>
D 1 1 0 50	† Testing:
Rack travel in mm: 0.50	Dated annual annual 200
Tolerance mm : $\leftarrow$ 0.20	+ Rated speed rpm : 350
	rack travel mm : 5.70 Tolerance mm : +- 0.10
governor spring	† Tolerance mm : + 0.10
pre-tension	Data damentament (100)
click setting x : 2.50	+ Rated speed rpm : 100
500 4 645 SELTHERY AT FILL LOAD	· · · · · · · · · · · · · · · · · · ·
FULL LOAD DELIVERY AT FULL LOAD :	DIUP
Date of annual area - 700	TODOLES CONTROL
Rated speed rpm : 700	TORQUE CONTROL
Aneroid pressure	Dated 27224 277 / 700
hPa : -	+ Rated speed rpm : 700 + rack travel mm : 12.85
Del. quantity	
cm3/1000 strokes : 219.0	+ Tolerance mm : +- 0.05

## Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 25.0

## LOW IDLE

350 Rated speed rpm Del. quantity cm3/1000 strokes : 40.0 Tolerance 2.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 03.03.97

Test oil

: ISO 4113

Combination No. : 0 402 076 783

Injection pump

Pump designation : PES6P110A320LS3318

EP type number : 0 412 016 749

Governor

Governer design. : RSV350...750P4A561

Governer no. : 0 421 833 500

Cust. part No. : 1824991092

Customer-spec. information Customer : NAVISTAR : DTA-466 Motor

Power KW

: 247.5

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve : 1 417 413 076

Inlet press. bar :

Tolerance bar  $: \leftarrow 0.1$ 

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0

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x inside diameter: 3.0

x length mm :

ሪበበ

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : + 1.0

Prestroke mm 3.00

Tolerance mm

: +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order

: 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: +- 0.30 Tolerance

Check

Check

: +- 0.75 tolerance \*NW

Start of delivery blocking

: +- 0.50 Tolerance

tolerance \*NW

: <del>+-</del> 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm :

700

Rack travel in mm : 13.15

Tolerance mm

: +- 0.05

Del. quantity

cm3/1000 strokes : 242.5

Tolerance +	- Tolerance
cm3/1000 strokes : +- 1.0	- cm3/1000 strokes : +- 1.0
+	- Check tolerance
Check tolerance	- cm3/1000s. : +- 3.0
cm3/1000s. : +- 3.0	- Spreed
	- Tolerance
Spreed	- cm3/1000 strokes : 4.0
opr ced	- Check tolerance
Tolerance	- cm3/1000s. : 6.5
cm3/1000 strokes : 4.0	· (IID7 10003 0.)
cms/1000 strokes : 4.0	
Charle de Langue	•
Check tolerance	CONTROL LEVER
cm3/1000s. : 6.5	- CONTROL LEVER
†	- control lever
†	- position degree : 89.0
Rated speed rpm : 350 +	tolerance degree : +- 4.0
†	
Rack travel in mm: 5.00 +	RATED SPEED
Tolerance mm : $+$ 0.10	rack travel mm : 12.10
Del. quantity +	Rated speed rpm : 760
cm3/1000 strokes : 29.5	Tolerance 1/min : +- 5
Tolerance	•
cm3/1000 strokes : +- 2.0 +	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 800
cm3/1000s. : + 4.5	Tolerance 1/min : + 5
Spreed	
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 8.0	Tolerance mm : + 0.55
Check tolerance	Rated speed rpm : 900
cm3/1000s. : 12.0	
12.0	rack travel mm : 4.00
1	Rated speed rpm : 805
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
WITH GOVERNOR	
$\mathbf{I}$	· · · · · · · · · · · · · · · · · · ·
	LOW IDLE
GUIDE SLEEVE POSITION	LOW INCL
GOIDE SEEENE LOSILIAN	•
I	control lever
control lever	position degree : 70.0
	tolerance degree : +- 4.0
position degree : -3	toterance degree : + 4.0
Rated speed rpm : 800	Tactina
Tools down to the second to th	Testing:
Rack travel in mm: 0.50	Dated aread reserved 750
Tolerance mm : + 0.20 +	Rated speed rpm : 350
. +	rack travel mm : 5.00
governor_spring	Tolerance mm : +- 0.10
pre-tension +	
click setting x : 3.00	Rated speed rpm : 100
+	
+	CRT mm min. : > 19.00
FULL LOAD DELIVERY AT FULL LOAD STOP	
+	
Rated speed rpm : 700	TORQUE CONTROL
Aneroid pressure	
hPa : - +	Rated speed rpm : 700
Del. quantity	rack travel mm : 13.15
cm3/1000 strokes : 242.5	Tolerance mm : +- 0.05

## Start interlock

# STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 25.0

## LOW IDLE

Rated speed rpm 350 Del. quantity cm3/1000 strokes : 29.5 Tolerance 2.0 cm3/1000 strokes : +-Check tolerance cm3/1000s.4.5 : +-Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.02.97 Test oil : ISO 4113

Combination No. : 0 402 746 998

Injection pump

Pump designation : PES6P120A720RS7321 EP type number : 0 412 726 906

Governor

Governer design. : RQV325...875PA944

: K

Governer no. : 0 421 815 451

Cust. part No. : 313GC5212-P14

Customer-spec. information Customer : MACK Motor : EM7-300 Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm: 12.00 Tolerance mm: + 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.30

Check

tolerance \*NW : + 0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.10
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 312.0

		1	
Tolerance cm3/1000 strokes	: + 1.0	control lever position degree tolerance degree	
Check tolerance cm3/1000s.  Spreed	: + 4.0	RATED SPEED rack travel mm Rated speed rpm	: 13.00 : 930
opreed		Tolerance 1/min	: +- 5
Tolerance cm3/1000 strokes	: 5.0	Check speed 1/min	: + 10
Check tolerance cm3/1000s.	: 9.0	rack travel mm Rated speed rpm Tolerance 1/min Check	: 4.00 : 1115 : + 15
Rated speed rpm	: 340	speed 1/min	: +- 20
Rack travel in mm Tolerance mm	: 5.10 : + 0.10	+ rack travel mm + Tolerance mm + Rated speed rpm	: 0.50 : + 0.50 : 1210
Del. quantity cm3/1000 strokes Tolerance	: 40.0	<del>-</del>	
cm3/1000 strokes	: +- 3.0	+	
Check tolerance cm3/1000s.	: <del>+-</del> 5.0	+ LOW IDLE	
Spreed	. , , ,,,	<del>-</del>	
Tolerance cm3/1000 strokes Check tolerance	: 8.0	control lever position degree tolerance degree	: 68.0 : + 6.0
cm3/1000s.	: 12.0	+ Testing:	
(B) SETTING OF IN.	JECTION PUMP	Rated speed rpm	: 340
WITH GOVERNOR		+ rack travel mm	: 5.10
		† Tolerance mm	: +- 0.10
FULL LOAD DELIVERY	AT FULL LOAD STOP	Rated speed rpm	: 275
Dated award man	: 875	+ CRT mm min.	: > 6.00
Rated speed rpm Aneroid pressure hPa	: 875 : 1200	Rated speed rpm	: 425
Del. quantity cm3/1000 strokes	: 312.0	TORQUE CONTROL	
Tolerance cm3/1000 strokes Check tolerance	: + 1.0	Rated speed rpm	: 875 : 14.10
cm3/1000s. Spreed	: +- 4.0	Tolerance mm	: <b>←</b> 0.05
Tolerance cm3/1000 strokes	: 5.0	Rated speed rpm rack travel mm	: 510 : 14.85 : + 0.10
Check tolerance cm3/1000s.	: 9.0	+ Tolerance mm	. +- 0.10
		Rated speed rpm rack travel mm Tolerance mm	: 625 : 14.70 : + 0.20
CONTROL LEVER		Rated speed rpm	: 400

rack travel mm Tolerance mm	: 14.25 : + 0.20	+ Rated + Del. + cm3/1
ANEROID/ALTITUDE COMPENSATOR TEST		+ Toler + cm3/1 + Check + cm3/1
SETTING		<del>†</del>
Rated speed rpm Pressure hPa	: 510 : 1200	START
Pressure hPa Rated speed rpm rack travel mm Tolerance mm		Rated rack Toler Del. cm3/1
MEASUREMENT		+ cm3/10 + Check
Rated speed rpm	: 510	± cm3/10
Pressure hPa rack travel mm Tolerance mm	: 740 : 13.20 : ← 0.20	
Pressure hPa rack travel mm Tolerance mm	: 400 : 10.60 : + 0.05	+ LOW I + Rated + Del. 6 - cm3/10
Start interlock		+ Toler
Rated speed rpm Rated speed rpm		+ cm3/1 + Check + cm3/1 + Spree
Check speed 1/min Check	: > 80	Toler: - cm3/10
speed 1/min	: < 255	cm3/1
FUEL DELIVERY CHA	RACTERISTICS	+
Aneroid pressure		‡ —
hPa Rated speed rpm Del. quantity	: 1200 : 510	+ End o
cm3/1000 strokes	: 407.0	Ŧ
Tolerance cm3/1000 strokes	: <del></del> 3.0	Ŧ
Check tolerance cm3/1000s. Spreed	: ← 6.0	‡
Tolerance cm3/1000 strokes	: 8.0	+
Check tolerance cm3/1000s.	: 12.0	‡
Aneroid pressure hPa	: -	‡

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speed rpm : 400 quantity 000 strokes : 187.5 ance 000 strokes : +- 2.0 tolerance .2000 : ← 4.0 ING FUEL DELIVERY speed rpm : 100 travel mm : 21.00 ance mm : + 0.50quantity 000 strokes : 190.0 ance 000 strokes : +- 20.0tolerance : +- 30.0 000s. DLE speed rpm : 340 quantity 000 strokes : 40.0 ance 000 strokes : +-3.0 tolerance 000s. : <del>+-</del> 5.0 ance DOO strokes : 8.0 tolerance 000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.02.97 Test oil : ISO 4113

Combination No. : 0 403 466 127LA

Injection pump

Pump designation : PES6MW100/120RS1137

: 2

EP type number : 0 413 406 180

Governor

Governer design. : RSV550...1100MW2A335

: -1

Governer no.

Cust. part No. : 3926402

Customer—spec. information Customer : CDC Motor : 6 CTA Power KW : 194.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : +- 0.05
Check

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.30

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 9.00

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\bullet}NW$  :  $\leftarrow$  0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.65
Tolerance mm : + 0.10

oterance mm : + U.10

Del. quantity cm3/1000 strokes : 159.0	- Aneroid pressure - hPa : 1400 - Del. quantity
Tolerance cm3/1000 strokes : + 1.0	- cm3/1 <b>000</b> strokes : 159.0 - Tolerance
Check tolerance	- cm3/1000 strokes : +- 1.0 - Check tolerance - cm3/1000s. : +- 4.0
Spreed	- Spreed - Tolerance
7.1	- cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	- Check tolerance - cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	
	- CONTROL LEVER
Rated speed rpm : 600	- control lever - position degree : 97.0
<del>-</del>	tolerance degree : + 4.0
Rack travel in mm : 6.50 Tolerance mm : +- 0.10	- RATED SPEED
Del. quantity	- rack travel mm : 13.60
cm3/1000 strokes : 23.0	- Rated speed rpm : 1165 - Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : + 2.0	- Tolerance 1/min : +- 5
Check tolerance	- rack travel mm : 4.00
cm3/1000s. : +- 4.5	- Rated speed rpm : 1250
Spreed	- Tolerance 1/min : +- 5
cm3/1000 strokes : 3.5	rack travel mm : 1.00
Check tolerance	Tolerance mm : + 0.70
cm3/1000s. : 5.5	- Rated speed rpm : 1280 -
+	- rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	- Rated speed rpm : 1260
WITH GOVERNOR	•
+	
GUIDE SLEEVE POSITION	- LOW IDLE
+	· · · · · · · · · · · · · · · · · · ·
control lever + position degree : - 3	control lever position degree : 72.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.65	Control lever difference
Tolerance mm : +- 0.35	Grad : 25.0
governor spring	tolerance degree : +- 4.0
pre-tension +	Setting point w/out bumper spring
click setting x : 4.00	. Dated around reserve 400
	Rated speed rpm : 600 rack travel mm : 6.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 1100	Testing:

Tolerance mm	: 550 : 6.50 : ← 0.10	Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke
Rated speed rpm	: 100	Check tolerance
CRT mm min.	; > 19.00	Aneroid pressur
TORQUE CONTROL		- hPa Rated speed rpm
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 14.65 : ← 0.10	Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 750 : 15.20 : ← 0.10	cm3/1000s.
Rated speed rpm rack travel mm Tolerance mm	: 15.20	STARTING FUEL D Rated speed rpm
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance mm Del. quantity cm3/1000 stroke Tolerance
SETTING		cm3/1000 stroke Check tolerance cm3/1000s.
Rated speed rpm Pressure hPa	: 600 : 1400	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 600 : 10.80 : + 0.10	LOW IDLE Rated speed rpm
		+ Del. quantity
MEASUREMENT		+ cm3/1000 stroke
	: 600	+ cm3/1000 stroke + Tolerance + cm3/1000 stroke + Check tolerance
MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : 935 : 14.20 : + 0.20	Tolerance cm3/1000 stroke Check tolerance cm3/1000s. Spreed Tolerance
Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm	: 935 : 14.20	Tolerance - cm3/1000 stroke - Check tolerance - cm3/1000s Spreed - Tolerance - cm3/1000 stroke
Rated speed rpm Pressure hPa rack travel mm	: 935 : 14.20 : ← 0.20 : 575 : 12.00	Tolerance cm3/1000 stroke Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 stroke Check tolerance

cm3/1000 strokes	: 167.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance	
cm3/1000s.	: +- 5.0
Aneroid pressure	
hPa Rated speed rpm	: - 600
Del. quantity	. 000
cm3/1000 strokes	: 101.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance	: +- 1.0
cm3/1000s.	: <del>+-</del> 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
rack travel mm	: 20.00
Tolerance mm	: ← 1.00
Del. quantity cm3/1000 strokes	: 140.0
Tolerance	. 140.0
cm3/1000 strokes	: <b>←</b> 10.0
Check tolerance	47.0
cm3/1000s.	: +- 13.0
LOW IDLE	
Rated speed rpm Del. quantity	: 600
cm3/1000 strokes	: 23.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance	2.0
cm3/1000s.	: <b>←</b> 4.5
Spreed	
Tolerance cm3/1000 strokes	: 3.5
Check tolerance	, 3,3
cm3/1000s.	: 5.5

End of test specification sheet

hPa : 1400 Rated speed rpm : 750

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.03.97 : ISO 4113 Test oil

Combination No. : 0 403 466 127LB

Injection pump

Pump designation : PES6MW100/120RS1137

EP type number : 0 403 406 180

Governor

Governer design. : RSV550...1100MW2A335

: -1

Governer no.

Cust. part No. : 3928960

Customer-spec. information Customer : CDC : 6 CTA Motor Power KW : 194.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar :  $\leftarrow$  1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05 Check tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing Tolerance

: + 0.30

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 9.00 Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 14.65 Tolerance mm : +- 0.10

Del. quantity	- Aneroid pressure
cm3/1000 strokes : 159.0 -	- hPa : 1400 - Del. quantity
Tolerance - cm3/1000 strokes : +- 1.0 -	- cm3/1000 strokes : 159.0 - Tolerance
Check tolerance	- cm3/1000 strokes : +- 1.0 - Check tolerance
cm3/1000s. : +- 4.0	- cm3/1000s. : +- 4.0 - Spreed
Spreed	- Tolerance - cm3/1000 strokes : 4.0
Tolerance - 4.0 -	- Check tolerance
	- cm3/1900s. : 7.5 -
Check tolerance - cm3/1000S. : 7.5	- RATED SPEED
	- rack travel mm : 13.60 - Rated speed rpm : 1165
	- Tolerance 1/min : + 5
Rated speed rpm : 475	- - rack travel mm : 4.00
Rack travel in mm: 6.50	- Rated speed rpm : 1285
Tolerance mm : + 0.10	Tolerance 1/min : +- 5
Del. quantity	•
cm3/1000 strokes : 23.0	rack travel mm : 1.00
Tolerance	Tolerance mm : + 0.70
cm3/1000 strokes : +- 2.0 Check tolerance	Rated speed rpm : 1325
cm3/1000s. : +- 4.5	rack travel mm : 4.00
Spreed	Rated speed rpm : 1300
Tolerance	•
cm3/1000 strokes : 3.5	•
Check tolerance	-
	LOW IDLE
Check tolerance om3/1000s. : 5.5	
Check tolerance	LOW IDLE Control lever difference Grad: 25.0
Check tolerance om3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP	- Control lever difference
Check tolerance om3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP	- Control lever difference - Grad : 25.0
Check tolerance om3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP	Control lever difference Grad: 25.0 tolerance degree: +- 4.0  Setting point w/out bumper spring
Check tolerance om3/1000s. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring Rated speed rpm : 475
Check tolerance cm3/1COOS. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring Rated speed rpm : 475 rack travel mm : 6.00
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control Lever	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring Rated speed rpm : 475
Check tolerance cm3/1COOS. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring Rated speed rpm : 475 rack travel mm : 6.00
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing:
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control Lever position degree : -3 Rated speed rpm : 800	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing: Rated speed rpm : 475
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing:
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 475 rack travel mm : 6.50 Tolerance mm : +- 0.10
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing: Rated speed rpm : 475
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 475 rack travel mm : 6.50 Tolerance mm : +- 0.10
Check tolerance cm3/1COOS. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.00	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 475 rack travel mm : 6.50 Tolerance mm : +- 0.10  Rated speed rpm : 475 rack travel mm : 6.50 Tolerance mm : +- 0.10
Check tolerance cm3/1COOs. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 475 rack travel mm : 6.50 Tolerance mm : +- 0.10  Rated speed rpm : 475 rack travel mm : 6.50 Tolerance mm : +- 0.10
Check tolerance cm3/1COOS. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.00	Control lever difference Grad : 25.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 6.00 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 475 rack travel mm : 6.50 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00

rack travel mm : 14.65 Tolerance mm : + 0.10

Rated speed rpm : 750 rack travel mm : 15.20 Tolerance mm : +- 0.10

Rated speed rpm : 1000 rack travel mm : 15.20 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600 Pressure hPa : 1400

Pressure hPa : Rated speed rpm : 600
rack travel mm : 10.80
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 600

Pressure hPa : 935
rack travel mm : 14.20
Tolerance mm : + 0.20

Pressure hPa : 575
rack travel mm : 12.00
Tolerance mm : + 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1400 Rated speed rpm : 750 Del. quantity

cm3/1000 strokes : 167.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 5.0

Aneroid pressure

hPa : -Rated speed rpm : 600 Del. quantity

cm3/1000 strokes : 101.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

Del. quantity

cm3/1000 strokes : 140.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : + 13.0

LOW IDLE

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.11.95 : ISO 4113

Combination No. : 9 400 230 103

Injection pump

Pump designation : PES6A100D410RS2691

EP type number : 9 410 230 028

Governor

Governer design. : RQV350...1100AB1227R

Governer no. : 9 420 231 015

Cust. part No. : 3912645

Customer-spec. information

Customer : CDC

Mocor Power KW : 156.6

: 6 CT 8.3

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

: + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Phasing Tolerance : **←** 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00

: +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.65

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 126.5	Rated speed rpm : 600 guide sleeve
Tolerance cm3/1000 strokes : +- 1.0	travel mm : 4.20 Tolerance mm : + 0.30
Check tolerance cm3/1000s. : + 3.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	Rated speed rpm : 1100 Aneroid pressure
Tolerance cm3/1000 strokes : 4.0	hPa : 900 Del. quantity cm3/1000 strokes : 126.5
Check tolerance cm3/1000s. : 6.5	Tolerance : + 1.0
	Check tolerance + cm3/1000s. : + 3.0
Rated speed rpm : 350	Spreed Tolerance
B 1 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	+ cm3/1000 strokes : 4.0
Rack travel in mm : 5.50 Tolerance mm : → 0.10	+ Check tolerance + cm3/1000s. : 6.5
Del. quantity	
cm3/1000 strokes : 20.0	+
Tolerance cm3/1000 strokes : +- 2.0	CONTROL LEVER
Check tolerance cm3/1000s. : +- 4.5	+ control loves
Spreed 4.3	control lever position degree : 114.0
Tolerance	tolerance degree : + 4.0
cm3/1000 strokes : 6.0	+
Check tolerance	+ RATED SPEED
cm3/1000s. : 8.0	+ rack travel mm : 11.60
	+ Rated speed rpm : 1150 + Tolerance 1/min : +- 5
(B) SETTING OF INJECTION PUMP	T Toterance 17mm : +- 5
WITH GOVERNOR	rack travel mm : 4.00
	Rated speed rpm : 1275
CUIDE OF FOUR TRAVE	† Tolerance 1/min : +- 15
GUIDE SLEEVE TRAVEL	+ rack travel mm : 0.50
Rated speed rpm : 350	Tolerance mm : + 0.50
guide sleeve	+ Rated speed rpm : 1350
travel mm : 1.40	+
Tolerance mm : +- 0.20	rack travel mm : 4.00
Rated speed rpm : 1100	+
guide sleeve travel mm : 7.70	†
travel mm : 7.70	LOW IDLE
Rated speed rpm : 1150	+
guide sleeve	†
travel mm : 8.30	+ control lever
Tolerance mm : ← 0.30	<pre>position degree : 63.0 tolerance degree : + 4.0</pre>
Rated speed rpm : 1290	+
guide sleeve	Control lever difference
travel mm : 9.80	+ Grad : 51.0
Tolerance mm : +- 0.30	+ tolerance degree : +- 4.0

# Testing:

Rated speed rpm : 350 rack travel mm : 5.50 Tolerance mm : + 0.10

# TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 12.65 Tolerance mm : + 0.05

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500 Pressure hPa

Pressure hPa Rated speed rpm : 500 rack travel mm 10.20 Tolerance mm : +- 0.10

#### **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 535 rack travel mm : 12.00 : +- 0.20 Tolerance mm

Pressure nra
rack travel mm : 70.75
: + 0.05

# Start interlock

Rated speed rpm :> 100 Rated speed rpm : < 260

Check

speed 1/min 80 : > Check

speed 1/min : < 280

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 83.0 Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 15.50
Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0

Check tolerance

cm3/1000s. : **←** 15.0

# LOW IDLE

Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.08.96 Edition Test oil : ISO 4113

Combination No. : 9 400 230 119

Injection pump

Pump designation : PES6A100b320/3RS2691

: -2

EP type number : 9 410 230 028

Governor

Governer design. : RQV350...1250AB1235R

: 9 420 231 020 Governer no.

Cust. part No. : 3912636

Customer-spec. information Customer : CDC : 6 CT-830 : 157.0 Motor

Motor Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

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x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

: 2.85 : + 0.05 Prestroke mm Tolerance mm

Check

tolerance mm : **←** 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240 Tolerance

: +- 0.50

Check

tolerance 'NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : +- 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.95

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 122.5	Tolerance mm : +- 0.25 Rated speed rpm : 503
Tolerance cm3/1000 strokes : +- 1.0	guide sleeve : 2.57
Check tolerance : + 3.0	- Tolerance mm : +- 0.25 - - Rated speed rpm : 560
Spreed	guide sleeve travel mm : 3.10
Tolerance	Tolerance mm : + 0.25
cm3/1000 strokes : 4.0	- Rated speed rpm : 1680 - guide sleeve
Check tolerance cm3/1000S. : 6.5	travel mm : 11.50 Tolerance mm : +- 0.50
Rated speed rpm : 350	GUIDE SLEEVE POSITION
Rack travel in mm: 4.90 Tolerance num: 0.10	- control lever - position degree : - 1
Del. quantity	Rated speed rpm : 1550
cm3/1000 strokes : 16.0 Tolerance	- Rack travel in mm : 8.00
cm3/1000 strokes : +- 2.0 +- Check tolerance +-	Tolerance mm : + 1.30
cm3/1000S. : - 4.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance + cm3/1000 strokes : 6.0 +	Rated speed rpm : 1250
Check tolerance	Aneroid pressure
cm3/1060s. : 8.0	hPa : 700 Del. quantity
(B) SETTING OF INJECTION PUMP	cm3/1000 strokes : 122.5 Tolerance
WITH GOVERNOR +	cm3/1000 strokes : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : +- 3.0 Spreed Tolerance
Rated speed rpm : 1394 guide sleeve	cm3/1000 strokes : 4.0 Check tolerance
travel mm : 8.58	cm3/1000s. : 6.5
Tolerance mm : + 0.25	
Rated speed rpm : 300 + guide sleeve +	CONTROL LEVER
travel mm : 0.54 Tolerance mm : + 0.25	control lever
<del> </del>	position degree : 100.0
Rated speed rpm : 922 + guide sleeve + -	tolerance degree : +- 4.0
travel mm : 5.37 + Tolerance mm : + 0.25 +	RATED SPEED rack travel mm : 10.90
+	Rated speed rpm : 1295
Rated speed rpm : 453 + guide sleeve + 453	Tolerance 1/min : +- 5
travel mm : 1.96 +	rack travel mm : 4.00

Rated speed rpm Tolerance 1/min	: 1430 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: +- Q.50
LOW IDLE	
control lever position degree tolerance degree	: 65.0 : + 3.0
Control lever dif Grad tolerance degree	: 35.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.90 : + 0.10
Rated speed rpm	: 250
CRT mm min.	: > 7.80
Rated speed rpm	: 425
TORQUE CONTROL	***************************************
Rated speed rpm rack travel mm Tolerance mm	: 1250 : 11.95 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.40 : ← 0.10
Rated speed rom rack travel mm Tolerance mm	: 1200 : 11.95 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 12.40 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	

Pressure hPa	: 700
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 8.80 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 390 : 11.40 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 200 : 9.85 : + 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 290
Check speed 1/min Check speed 1/min	: > 80 : < 30C
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 700 : 750
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 700 : 750 : 134.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 700 : 750 : 134.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.70 Tolerance mm :  $\leftarrow 0.10$ 

Rated speed rpm : 500

Del. quantity cm3/1000 strokes	:	175.0
Tolerance	•	
cm3/1000 strokes	: +	- 10.0
Check tolerance		
cm3/1000s.	. +	- 15.0

# LOW IDLE

Rated speed rpm Del. quantity	: 3	350
cm3/1000 strokes Tolerance	:	16.0
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s.	: +-	4.0
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	6.0
cm3/1000s.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.97 Test oil : ISO 4113

Combination No. : 0 400 075 926Y

Injection pump

Pump designation : PES5M55C32ORS201 EF type number : 0 410 055 972Y

Governor

Governer design. : RSF250/2500M75-3 Governer no. : 0 420 021 173

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM605
Power KW : 83.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05
Check

Lneck

tolerance mm : + 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

Start of delivery blocking

\*NW after s.o.d. : 16.50 Tolerance : + 0.20

Check

tolerance \*NW : + 0.30

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.75
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 1.5

Spreed Tolerance	Rated speed rpm : 1400
cm3/1000 strokes : 2.5	CRT mm max. : 1.95
Check tolerance cm3/1000s. : 3.0	LOW IDLE
Rated speed rpm : 350	Setting point w/out bumper spring
Rack travel in mm: 7.40 Tolerance mm: + 0.10	Rated speed rpm : 350 rack travel mm : 7.40
Del. quantity cm3/1000 strokes : 8.5	SET IDLE AUXILIARY SPRING
Tolerance cm3/1000 strokes : + 0.5	Rated speed rpm : 475 rack travel mm : 5.40
Spreed Tolerance	Tolerance mm : + 0.10
cm3/1000 strokes : 1.0	+ Load pick-up
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1400
WITH GOVERNOR	CRT mm max. : 1.95
IDLE STAGE	rack travel mm : 7.40 Rated speed rpm : 350
Rack travel in mm: 6.25 Tolerance mm: + 0.25	TORQUE CONTROL
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1400 rack travel mm : 12.75 Tolerance mm : +- 0.05
Rated speed rpm : 1400 Ref. pressure ALDA / ADA hPa : 1100	+ Rated speed rpm : 2300 - rack travel mm : 12.30
Del. quantity cm3/1000 strokes : 37.0	Tolerance mm : +- 0.15
Tolerance cm3/1000 strokes : + 0.5 Check tolerance	Rated speed rpm : 2500 rack travel mm : 11.90 Tolerance mm : +- 0.15
cm3/1000s. : + 1.5 Spreed	
Tolerance cm3/1000 strokes : 2.5	ADJUSTMENT TEST ADA/ALDA
Check tolerance cm3/1000s. : 3.0	SETTING
	Rated speed rpm : 1400 Ref. pressure
RATED SPEED	ALDA / ADA hPa : 940 rack travel mm : -0.10
Tolerance mm : + 0.30	Tolerance mm : + 0.10
Rated speed rpm : 3150 rack travel mm : 0.50 Tolerance mm : + 0.50	MEASUREMENT
Tolerance mm : +- 0.50	Rated speed rpm : 1400 Ref. pressure
SET IDLE CONTROL LEVER POSITION	+ ALDA / ADA hPa : 900 - rack travel mm : -0.40 - Tolerance mm : + 0.10

Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 750 : -1.50 : + 0.20	Tolerance mm : + 1.50 Del. quantity cm3/1000 strokes : 55.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s. : + 5.0
FUEL DELIVERY CHAP	RACTERISTICS	Spreed Tolerance cm3/1000 strokes : 6.0
Ref. pressure	1	Check tolerance
ALDA / ADA hPa Rated speed rpm Del. quantity	: 1100 : 2300	cm3/1000s. : 6.0
cm3/1000 strokes Tolerance	: 39.3	
cm3/1000 strokes Check tolerance	: ← 0.8	LOW IDLE
cm3/1000s. Spreed	: + 1.8	Rated speed rpm : 350 Del. quantity
Tolerance cm3/1000 strokes	: 2.5	cm3/1000 strokes : 9.5 Check tolerance
Check tolerance cm3/1000s.	: 3.0	cm3/1000s. : + 2.3 Spreed
Ref. pressure	‡	Check tolerance cm3/1000s. : 1.5
ALDA / ADA hPa Rateo speed rpm	: 1100 : 2500	
Spreed		
Del. quantity cm3/1000 strokes	: 38.0	
Tolerance cm3/1900 strokes	: - 1.0	control lever
Check tolerance cm3/1000s. Spreed	: ← 2.0	position degree : > 49.00
Tolerance	Ţ	control lever
cm3/1000 strokes Check tolerance	+	position degree : < 46.50
cm3/1000s.	: 3.0	SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION
HIGH IDLE	<u> </u>	Rated speed rpm : 400
Ref. pressure	Ţ	Rack travel in mm: 8.25
ALDA / ADA hPa	: 1100	Tolerance mm : + 0.70
Tolerance mm	: + 0.30	Del. quantity
Del. quantity cm3/1000 strokes	: 14.0	cm3/1000 strokes : 12.0 Tolerance
Tolerance cm3/1000 strokes	: ← 2.0 ‡	cm3/1000 strokes : +- 3.5 Check tolerance
Check tolerance cm3/1000s.	: + 3.0	cm3/1000s. : + 4.5 Vacuum hPa : 450.0
STARTING FUEL DELI	(VEDY	
ALMATING LAST AST	1	
Rated speed rpm rack travel mm		ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1400 rack travel mm : 1.70 Tolerance mm : + 0.15

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 350 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 03.03.97 Test oil : US.US.97

Combination No. : 0 400 076 954Y

Injection pump

Pump designation : PES6M55C32ORS203 EP type number : 0 470 056 982Y

Governor

Governer design. : RSF315/2500M70-10 Governer no. : 0 420 021 175

Cust. part No. :

Customer-spec, information Customer : MB-PKW : 0M6O6 Motor

Power KW

: 100.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 7.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

: 148.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05 Check

tolerance mm

Rack travel in mm: 21.00

Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 4

: + 0.10

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 16.50 Tolerance : + 0.20

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 13.35

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 39.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s. : + 1.5

Spreed

Tolerance cm3/1000 strokes	: 2.5
Check tolerance cm3/1000s.	: 3.0
Rated speed rpm	: 290
Rack travel in mm Tolerance mm Del. quantity	; 7.30 ; + 0.10
cm3/1000 strokes	: 8.5
Tolerance cm3/1000 strokes Spreed	: ← 0.5
Tolerance cm3/1000 strokes	: 1.0
(B) SETTING OF IN	JECTION PUMP
IDLE STAGE	
Rack travel in mm Tolerance mm	: 6.25 : + 0.25
FULL LOAD DELIVER	Y AT FULL LOAD STOP
FULL LOAD DELIVER Rated speed rpm Ref. pressure	
Rated speed rpm Ref. pressure ALDA / ADA hPa	: 1160
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes	: 1100 : 1100
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerence cm3/1000 strokes	: 1100 : 1100
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Toler@nce cm3/1000 strokes Check tolerance cm3/1000s.	: 1100 : 1100 : 39.0
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1100 : 1100 : 39.0 : \( \to 0.5 \) : \( \to 1.5 \)
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1100 : 1100 : 39.0 : ← 0.5
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1100 : 1100 : 39.0 : \( \to 0.5 \) : \( \to 1.5 \)
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1100 : 1100 : 39.0 : ← 0.5 : ← 1.5
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerence cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1100 : 1100 : 39.0 : ← 0.5 : ← 1.5
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerence cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. RATED SPEED	: 1100 : 1100 : 39.0 : ← 0.5 : ← 1.5 : 2.5 : 3.0
Rated speed rpm Ref. pressure ALDA / ADA hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. RATED SPEED Tolerance mm Rated speed rpm rack travel mm	: 1100 : 1100 : 39.0 : ← 0.5 : ← 1.5 : 2.5 : 3.0 : ← 0.10 : 3000 : 1.00 : ← 1.00

CRT mm max. :	1.95
LOW IDLE	
Setting point w/out Rated speed rpm : rack travel mm :	290
SET IDLE AUXILIARY	SPRING
Rated speed rpm : rack travel mm : Tolerance mm :	
Load pick-up	
Rated speed rpm :	1100
CRT mm max. :	1.95
rack travel mm : Rated speed rpm :	7.30 290
TORQUE CONTROL	
rack travel mm :	1100 13.35 +- 0.05
Rated speed rpm : rack travel mm : Tolerance mm :	12.75
Rated speed rpm : rack travel mm : Tolerance mm :	2500 12.25 + 0.15
Rated speed rpm : rack travel mm : Tolerance mm :	500 12.50 + 0.15
ADJUSTMENT TEST ADA	/ALDA
SETTING	
Rated speed rpm : Ref. pressure ALDA / ADA hPa : rack travel mm : Tolerance mm :	940
MEASUREMENT	
Rated speed rpm :	1100

Ref. pressure	1		
ALDA / ADA hPa :	900 ‡		
rack travel mm :	-0.40	HIGH IDLE	
	+ 0.10		
	+	Ref. pressure	
Ref. pressure	+		: 1100
			: + 0.10
	-1.50	Del. quantity	
Tolerance mm :	+ 0.20	cm3/1000 strokes	: 20.0
	†	Tolerance	
	†	cm3/1000 strokes	: +- 2.0
FUEL DEL TUEDY CHADA	CTEDICTICS	Check tolerance	
FUEL DELIVERY CHARAC	CIEKISIICS		: <del>+</del> 3.0
Ref. pressure	†	Spreed Tolerance	
	1100 I	cm3/1000 strokes	: 2.5
Rated speed rpm :	2000	Check tolerance	. 2.3
Del. quantity	I	cm3/1000s.	: 3.0
cm3/1000 strokes :	40.1	tile/ 10005.	. 3.0
Tolerance	1		
cm3/1000 strokes :	+ 0.8	STARTING FUEL DELI	VERY
Check tolerance	1		
cm3/1000s. :	+ 1.8	Rated speed rpm	: 100
Spreed	+	rack travel mm	: 21.60
Tolerance	+	Tolerance mm	: <b>←</b> 1.50
cm3/1000 strokes :	2.5	Del. quantity	
Check tolerance	+	cm3/1000 strokes	: 59.0
cm3/1000s. :	3.0	Tolerance	
	+	cm3/1000 strokes	: +- 4.0
Ref. pressure	+	Check tolerance	
	1100 +		: <del>←</del> 5.0
	2500 +	Spreed	
Spreed	†	Tolerance cm3/1000 strokes	: 8.0
Del. quantity cm3/1000 strokes :	39.5	Check tolerance	: 8.0
Tolerance	J <sup>2</sup> I	cm3/1000s.	: 8.5
	+ 1.0 I	(11)/10003.	. 0.5
Check tolerance	1		
	+ 2.0		
Spreed	1		
Tolerance	<del>-</del>	LOW IDLE	
cm3/1000 strokes :	2.5		
Check tolerance	<del>-</del>		: 290
cm3/1000s. :	3.0		: 7.50
	+		: +- 0.15
Ref. pressure	†	Del. quantity	
	1100 +	cm3/1000 strokes	: 9.5
	500 +	Check tolerance	
Del. quantity cm3/1000 strokes :	32.9		: + 2.3
Tolerance	32.9	Spreed Check tolerance	
	+ 0.8		: 1.5
Check tolerance	I	10000 ·	• 1•3
	+ 1.8		
Tolerance	1		
cm3/1000 strokes :	2.5	SETTING/TESTING EL	ECTRONIC IDLE
Check tolerance	<del>}</del>	REGULATION (ELR)	
cm3/1000s. :	3.0		
	+	Rated speed rpm	: 315
	+		

Rack travel in mm : 13.20 Tolerance mm : + 0.70

Del. quantity cm3/1000 strokes : 34.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.5

Current A : 1.80

Rated speed rpm : 3000

Rack travel in mm : 1.00 Tolerance nm : + 1.00

Current short-

Starting test

Rated speed rpm : 100

: 1.80 Current A

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 290 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.03.97 Edition Test oil : ISO 4113

Combination No. : 0 400 076 955Y

Injection pump

Pump designation : PES6M55C32ORS2O3 EP type number : 0 410 056 982Y

Governor

Governer design. : RSF315/2500M76 Governer no. : 0 420 021 174

Cust. part No. :

Customer-spec, information Customer : MB-PKW : OM606 Motor : 100.0 Fower KW

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : +- 2.0 Tolerance \*C

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

: 148.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 21.00

Tolerance mm : +- 1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 16.50 Tolerance : +- 0.2C Check

tolerance \*NW : +- 0.30

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 39.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s.

: +- 1.5

Spreed

Tolerance cm3/1000 strokes	: 2.5
Check tolerance cm3/1000s.	: 3.0
Rated speed rpm	; 300
Rack travel in mm Tolerance mm Del. quantity	: 7.30 : + 0.10
cm3/1000 strokes	: 8.5
Tolerance cm3/1000 strokes Spreed	: <b>←</b> 0.5
Tolerance cm3/1000 strokes	: 1.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP
IDLE STAGE	
Rack travel in mm Tolerance mm	: 6.25 : + 0.25
FULL LOAD DELIVERY	Y AT FULL LOAD STOP
Rated speed rpm	: 1100
Ref. pressure ALDA / ADA hFa	: 1100 : 1100
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes	: 1100
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1100 : 39.0
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1100 : 39.0
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1100 : 39.0 : ← 0.5 : ← 1.5
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1100 : 39.0 : ← 0.5 : ← 1.5 : 2.5
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1100 : 39.0 : ← 0.5 : ← 1.5
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1100 : 39.0 : ← 0.5 : ← 1.5
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: 1100 : 39.0 : ← 0.5 : ← 1.5
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  RATED SPEED  Tolerance mm  Rated speed rpm rack travel mm	: 1100 : 39.0 : ← 0.5 : ← 1.5 : 2.5 : 3.0 : ← 0.10 : 3000
Ref. pressure ALDA / ADA hFa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  RATED SPEED  Tolerance mm  Rated speed rpm rack travel mm	: 1100 : 39.0 : + 0.5 : ← 1.5 : 2.5 : 3.0 : + 0.10 : 3000 : 1.00 : + 1.00

CRT mm max.	: 1.95	
LOW IDLE		-
Setting point w/o Rated speed rpm rack travel mm	out bumper spring : 300 : 7.30	
SET IDLE AUXILIA	RY SPRING	
Rated speed rpm rack travel mm Tolerance mm	: 400 : 6.00 : + 0.10	
Load pick-up		
Rated speed rpm	: 1100	
CRT mm max.	: 1.95	
rack travel mm Rated speed rpm	: 7.30 : 300	
TORQUE CONTROL		
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 13.35 : + 0.05	
Rated speed rpm rack travel mm Tolerance mm	: 2000 : 12.75 : +- 0.15	
Rated speed rpm rack travel mm Tolerance mm	: 2500 : 12.25 : +- 0.15	
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.50 : ← 0.15	
ADJUSTMENT TEST	NDA/ALDA	
SETTING		
Rated speed rpm Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 940	
Rated speed rpm	: 1100	

Ref. pressure	1	
ALDA / ADA hPa	: 900	
rack travel mm	: -0.40	HIGH IDLE
Tolerance mm	: <b>←</b> 0.10	
_	+	Ref. pressure
Ref. pressure	t	ALDA / ADA hPa : 1100
ALDA / ADA hPa	: 750 +	Tolerance mm : +- 0.10
rack travel mm	: -1.50	Del. quantity
Tolerance mm	: <b>←</b> 0.20 +	cm3/1000 strokes : 20.0
	Ť	Tolerance cm3/1000 strokes : +- 2.0
		cm3/1000 strokes : +- 2.0 Check tolerance
FUEL DELIVERY CHA	PACTERISTICS	cm3/1000s, : +- 3.0
	110000000000000000000000000000000000000	Spreed
Ref. pressure	1	Tolerance
ALDA / ADA hPa	: 1100	cm3/1000 strokes : 2.5
Rated speed rpm	: 2000	Check tolerance
Del. quantity	+	cm3/1000s. : 3.0
cm3/1000 strokes	: 40.7	
Tolerance	+	
cm3/1000 strokes	: + 0.8	STARTING FUEL DELIVERY
Check tolerance cm3/1000s.	: + 1.8	Rated speed rpm : 100
Spreed	· - 1.0	rack travel mm : 21.69
Tolerance	I	Tolerance mn : + 1.50
cm3/1000 strokes	: 2.5	Del. quantity
Check tolerance	1	cm3/1000 strokes : 55.0
cm3/1000s.	: 3.0	Tolerance
	<del> </del>	cm3/1000 strokes : +- 4.0
Ref. pressure	+	Check tolerance
ALDA / ADA hPa	: 1100 +	cm3/1000s. : +- 5.0
Rated speed rpm	: 2500	Spreed
Spreed	†	Tolerance
Del. quantity	: 39.5	cm3/1000 strokes : 6.0
cm3/1090 strokes Tolerance	: 37.3	Check tolerance cm3/1000s. : 6.0
cm3/1000 strokes	: + 1.0 I	CIID/ 10003 0.0
Check tolerance	1	
cm3/1000s.	: + 2.0 <del> </del>	
Spreed	+	
Tolerance	+	LOW IDLE
cm3/1000 strokes	: 2.5	
Check tolerance		Rated speed rpm : 300
cm3/1000s.	: 3.0	rack travel mm : 7.30
Ref. pressure	Ţ	Tolerance mm : +- 0.15 Del. quantity
ALDA / ADA hPa	: 1100	cm3/1000 strokes : 9.5
Rated speed rpm	•	Check tolerance
Del. quantity	. 350	cm3/1000s. : +- 2.3
cm3/1000 strokes	: 32.6	Spreed
Tolerance	+	Check tolerance
cm3/1000 strokes	: + 0.8	cm3/1000s. : 1.5
Check tolerance	+	
cm3/1000s.	: + 1.8	
Tolerance	. 35	CETTING /TECTING ELECTRONIC TOLE
cm3/1000 strokes Check tolerance	: 2.5	SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)
cm3/1000s.	: 3.0	VERILIAIA (EFL)
UND/ TOOUS.	· 3.3	Rated speed rpm : 315
	Ţ	TO TO THE TOTAL TO
	1	

Rack travel in mm : 13.20 Tolerance mm : + 0.70

Del. quantity

cm3/1000 strokes : 34.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.5

Current A : 1.80

Rated speed rpm : 3000

Rack travel in mm : 1.00 Tolerance mm : + 1.00

Current short—

Starting test

Rated speed rpm : 100

Current A : 1.80

# ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1100 rack travel mm : 1.70 Tolerance mm : + 0.20

# TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 300 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.01.97 Test oil : ISO 4113

Combination No. : 0 402 646 649

Injection pump

Pump designation : PE6P130A720RS7339 EP type number : 0 412 636 833

Governor

Governer design. : RQV300...950PA905-1 Governer no. : 0 421 814 097

Cust. part No. :

Customer-spec. information Customer : IVECO-AIFO Motor : 8210.SRI Power KW : 353.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

40 temp. °C temp. \*C : 40
Tolerance \*C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : 4 0.05 Check

tolerance mm : + 0.10

Rack travel in mm: 14.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing Tolerance Phasing

: +- 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Check

tolerance \*NW : + 0.40

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 300

Rack travel in mm: 4.70 Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes : + 3.0

		•	
Check tolerance cm3/1000S.	: <b>←</b> 7.0	T RATED SPEED	
Spreed		+ rack travel mm	: 12.90
Tolerance		+ Rated speed rpm	
cm3/1000 strokes	: 6.0	† Tolerance 1/min	: <del>+-</del> 5
Check tolerance	40.0	†	. 55
cm3/1000S.	: 10.0	+ rack travel mm	: 4.00
		+ Rated speed rpm	
(D) APPETANCE OF The	LIEGTICKI SUMS	† Tolerance 1/min	: +- 15
(B) SETTING OF IN	MECITON PUMP	†	. 0.50
WITH GOVERNOR		+ rack travel mm	
		+ Tolerance mm	: +- 0.50 : 1200
GUIDE SLEEVE TRAN	/F1	- † Rated speed rpm	. 1200
COTOC SECTAL LIVE		T rack travel mm	: 6.00
Rated speed rpm	: 1000	I rack cravec limit	• • • • • • • • • • • • • • • • • • • •
guide sleeve	. 1000	I	
travel mm	: 7.75	$\mathbf{I}$	
Tolerance ma	: + 0.15		
race dine min	· · • • • • • • • • • • • • • • • • • •	I LOW IDLE	
Rated speed rpm	: 300	T LOW IDEE	
guide sleeve		1	
travel mm	: 1.81	control lever	
Tolerance ma	: +- 0.20	position degree	. 65.0
TOCCI CITICO TINI	0.20	tolerance degree	
Rated speed rpm	: 409	I toter ance degree	4.0
guide sleeve	. 40/	Testing:	
travel mm	: 2.86	T resumg.	
Tolerance mm	: +- 0.25	Rated speed rpm	: 300
IOCEL GILCE HEII	0.23	+ rack travel mm	: 4.70
Rated speed rpm	: 459	Tolerance mm	: + 0.10
guide sleeve	. 437	T local ance in	
travel mm	: 3.29	Rated speed rpm	: 200
Tolerance mm	: + 0.25	T Nated speed i pili	. 200
TOCCI GITCO MIII	0.23	CRT mm min.	: > 6.20
Rated speed rpm	: 720	1	
guide sleeve		+ Rated speed rpm	: 430
travel mm	: 4.94	1 Natura opera . piii	
Tolerance mm	: + 0.25	1	
10001 (21)00			
Rated speed rpm	: 1260	+ ANEROID/ALTITUDE	
guide sleeve		+ COMPENSATOR TEST	
travel mm	: 11.50	1	
Tolerance mm		<del>-</del>	
		+ SETTING	
		+	
GUIDE SLEEVE POSI	TION	+ Rated speed rpm	
		+ Pressure hPa	
Rated speed rpm	: 1090	† rack travel mm	: 13.95
		† Tolerance mm	: <del>+-</del> 0.05
Rack travel in mo		+	
Tolerance mm	: + 1.30	† MEASUREMENT	
		<del>†</del>	
		+ Rated speed rpm	: 500
CONTROL   FI :TO	<del></del>		. 750
CONTROL LEVER		+ Pressure hPa	: 350
		+ rack travel mm	
control lever	. 11/. 0	† Tolerance mm	: <b>←</b> 0.10
position degree		T Dancas 40a	. 520
tolerance degree	: +- 4.0	† Pressure hPa	: 520

rack travel mm : 12.95 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

Check

speed 1/min : > 80

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 196.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 24.0

# LOW IDLE

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 7.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 28.02.97 : ISO 4113

Combination No. : 9 402 546 574

Injection pump

Pump designation : PE6P120A320RS7300 EP type number : 0 412 626 886

Governor

Governer design. : RQV275...1000PA1332K

: 0 421 815 551 Governer no.

Cust. part No. : 1322503

Customer-spec. information Customer : DAF

Motor : WS 242 M Power KW : 242.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temo. °C Tolerance °C : **←** 2.0

: 1 417 413 000 Overflow valve

Inlet press. bar : : +- 0.1 Tolerance bar

Overflow quantity

: 140 min. L/h Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm :

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 5.35 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 15.00 Tolerance mm :  $\leftarrow$  0.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

Tolerance : +- 0.30

Check

: +- 0.50 tolerance \*NW

Start of delivery mark

Tolerance : + 0.10

Check

tolerance \*NW : +- 0.75

Barrel no.

BASIC SETTING

980 Rated speed rpm :

Rack travel in mm: 15.05 Tolerance mm :  $\leftarrow$  0.05

J25

	l guida al aqua
No.1 diametric	f guide sleeve
Del. quantity cm3/1000 strokes : 228.0	travel mm : 3.34 Tolerance mm : + 0.25
	+
Tolerance	+ Rated speed rpm : 1282
$cm3/1000$ strokes : $\leftarrow$ 1.0	+ guide sleeve
	† travel mm : 12.00
Check tolerance	+ Tolerance mm : + 0.25
$cm3/1000s.$ : $\leftarrow$ 4.0	+
	+ Rated speed rpm : 1370
Spreed	+ guide sleeve
	+ travel mm : 13.50
Tolerance	- Tolerance mm : + 0.50
cm3/1000 strokes : 5.0	+
Check tolerance	→ GUIDE SLEEVE POSITION
cm3/1000s. : 9.0	<del>}</del>
	1
	- control lever
	position degree : - 1
Rated speed rpm : 275	Rated speed rpm : 1240
	Traded opeca (piii · 12-10
Rack travel in mm : 5.30	Rack travel in mm: 14.20
Tolerence min : +- 0.10	Tolerance mm : + 2.70
Del. quantity	1 Total and the man
cm3/1000 strokes : 17.0	
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : +- 3.0	T FOLL LOAD DELIVERY AT FULL LUAD STOP
Check tolerance	Datad anged ann a COO
	- Rated speed rpm : 980
+ · · · · · · · · · · · · · · · · · · ·	+ Aneroid pressure
Spreed	hPa : 1500
Tolerance	+ Del. quantity
cm3/1000 strokes : 8.0	+ cm3/1000 strokes : 228.0
Check tolerance	+ Tolerance
cn3/1000s. : 12.0	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
	+  cm3/1000s. : + 4.0
(B) SETTING OF INJECTION PUMP	+ Spreed
WITH GOVERNOR	Tolerance
	+ cm3/1000 strokes : 5.0
	+ Check tolerance
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : 9.0
	†
Rated speed rpm : 1050	+
guide sleeve	
travel mm : 7.41	+ CONTROL LEVER
Tolerance mm : + 0.15	+
	+ control lever
Rated speed rpm : 275	+ position degree : 112.0
guide sleeve	+ tolerance degree : + 4.0
travel mm : 2.04	+
Tolerance mm : + 0.20	+ RATED SPEED
	+ rack travel mm : 14.05
Rated speed rpm : 820	+ Rated speed rpm : 1040
guide sleeve	+ Tolerance 1/min : +- 5
travel mm : 5.14	Check
Tolerance mm : + 0.25	+ speed 1/min : +- 10
The second control of the second control of	1
Rated speed rpm : 480	rack travel mm : 4.00
	Rated speed rpm : 1165
	1

Tolerance 1/min Check speed 1/min rack travel mm Tolerance mm Rated speed rpm	: + 20 : 0.70
LOW IDLE	
control lever position degree tolerance degree	: 75.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.30 : + 0.10
Rated speed rpm	: 175
CRT mm min.	: > 8.50
Rated speed rpm	: 350
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 750 : 14.95 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 14.60 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 14.40 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	

Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 980 : 12.30 : +- 0.10
MEASUREMENT	
Rated speed rpm	: 980
Pressure hPa rack travel mm Tolerance mm	: 480 : 14.35 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 270 : 12.90 : + 0.10
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1500 : 750 : 238.0 : +- 2.0 : +- 5.0 : 8.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1500 : 750 : 238.0 : +- 2.0 : +- 5.0

#### SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 15.05
Tolerance mm : + 0.05

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 17.0

Tolerance cm3/1000 strokes	; <b>←</b>	3.0	
Check tolerance cm3/1000s. Spreed	: +-	6.0	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	8.0	
	:	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27,02,97 : ISO 4113

Combination No. : 0 402 646 997A

Injection pump

Pump designation : PE6P12OA320LS7852 EP type number : 0 412 626 871

Governor

Governer design. : RQV300...950PA1033

Governer no. : 0 421 814 008

Cust. part No. : 0230744302

Customer-spec. information Customer : MB-NFZ Motor : OM441 LA : 250.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C : +-2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : **←** 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0 x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05 Check : **←** 0.10 tolerance mm

Rack travel in mm: 20.50

Tolerance mm :  $\leftarrow$  0.50

Firing order : 6-3-5-2-4-

: 1-

: 0-60-120-180-240 Phasing

: 0-360

: ← 0.30 Tolerance

Check

tolerance °NW : +- 0.50

Start of delivery mark

: + 0.10Tolerance

Check

tolerance \*NW : **←** 0.75

: 6 Barrel no.

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 252.0	† Tolerance mm : + 0.25
	Rated speed rpm : 780
Tolerance	+ guide sleeve + travel mm : 6.31
cm3/1000 strokes : + 1.0	
Oh a da Andreas	+ Tolerance mm : + 0.25
Check tolerance	Date of an and an an an an an an an an an an an an an
cm3/1000s. : +- 4.0	Rated speed rpm : 1092
	+ guide sleeve
Spreed	+ travel mm : 10.00
<b>-</b> 1 .	Tolerance mm : + 0.25
Tolerance	1400
cm3/1000 strokes : 5.0	Rated speed rpm : 1190
	+ guide sleeve
Check tolerance	+ travel mm : 11.50
cm3/1000s. : 9.0	† Tolerance mm : +- 0.50
	†
	CHINE CLEENE COCTITON
8 had a cond man 700	GUIDE SLEEVE POSITION
Rated speed rpm : 300	†
	†
Rack travel in mm : 5.50	+ control lever
Tolerance mm : + 0.10	+ position degree : - 1
Del. quantity	+ Rated speed rpm : 1040
cm3/1000 strokes : 19.0	†
Tolerance	+ Rack travel in mm : 14.10
cm3/1000 strokes : +- 3.0	+ Tolerance mm : + 1.30
Check tolerance	†
cm3/1000s. : + 6.0	
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	<b>†</b>
cm3/1000 strokes : 6.0	Rated speed rpm : 550
Check tolerance	+ Aneroid pressure + hPa : 1100
cm3/1000s. : 10.0	
	+ Del. quantity + cm3/1000 strokes : 252.0
(D) OPTITUD OF THEFTINE DUMP	
(B) SETTING OF INJECTION PUMP	+ Tolerance + cm3/1000 strokes : + 1.0
WITH GOVERNOR	+ Check tolerance
	+ cneck toterance + cm3/1000s. : +- 4.0
CHIEF OF FEVE TRAVEL	1
GUIDE SLEEVE TRAVEL	+ Spreed + Tolerance
Rated speed rpm : 1009	+ cm3/1000 strokes : 5.0
	+ Check tolerance
guide sleeve travel mm : 8.55	+ cm3/1000s. : 9.0
Tolerance mm : +- 0.15	
roteracice mail O.15	1
Rated speed rpm : 300	
guide steeve	+ CONTROL LEVER
travel mm : 1.29	T CONTINUE ELEVEN
Tolerance mm : +- 0.20	control lever
TOTAL GIVE HALL C.CO	position degree : 122.0
Rated speed rpm : 567	tolerance degree : + 4.0
guide sleeve	+
travei mm : 4.66	RATED SPEED
Tolerance mm : +- 0.25	rack travel mm : 14.10
TOPE SHIPE HALL O.E.	Rated speed rpm : 995
Rated speed rpm : 617	Tolerance 1/min : + 5
guide sleeve	1
travel mm : 5.23	rack travel mm : 4.00
V1 4 7 0 0 1981	,

	4400	1
Rated speed rpm		Danage
Tolerance 1/min	: +- 15	+ Pressure hPa : 150
	0.70	rack travel mm : 10.05
rack travel mm	: 0.70	+ Tolerance mm : + 0.20
Tolerance mm	: +- 0.70	† 5
Rated speed rpm	: 1200	+ Pressure hPa : 550
		rack travel mm : 13.85
		+ Tolerance mm : +- 0.20
		† • • • • • • • •
LOW IDLE		† Partial and a 200
		+ Rated speed rpm : > 100
		Rated speed rpm : < 220
control lever		The state of the s
position degree		+ Check
tolerance degree	: +- 4.0	speed 1/min : > 80
T		+ Check + speed 1/min : < 240
Testing:		+ speed 1/min : < 240
Dotad aread are	: 300	<u></u>
Rated speed rpm rack travel mm		FUEL DELIVERY CHARACTERISTICS
		T FOEL DELIVERY CHARACTERISTICS
Tolerance mm	: 0.10	Aneroid pressure
Rated speed rpm	: 200	hPa : 1100
Rated speed roil	: 200	Rated speed rpm : 950
CRT mm min.	: > 8.50	Del. quantity
CRI man mirit.	. > 0.50	cm3/1000 strokes : 240.0
Rated speed rpm	: 325	Tolerance
Rated speed (pil	. 323	cm3/1000 strokes : +- 3.0
		Check tolerance
TORQUE CONTROL		+ cm3/1000s. : + 6.0
TORIGOE CONTINUE		Spreed
Rated speed rpm	: 550	Tolerance
rack travel mm		+ cm3/1000 strokes : 8.0
Tolerance mm		- Check tolerance
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )		+ cm3/1000s. : 12.0
Rated speed rpm	: 950	1
rack travel mm		Aneroid pressure
Tolerance mm	: + 0.10	∔ hPa : -
		Rated speed rpm : 500
	<del></del>	+ Del. quantity
ANEROID/ALTITUDE		+ cm3/1000 strokes : 135.0
COMPENSATOR TEST		† Tolerance
_		+ cm3/1000 strokes : $+$ 1.0
		† Check tolerance
SETTING		+ cm3/1000s. : + 4.0
		+ Spreed
Rated speed rpm		+ Tolerance
Pressure hPa		+ cm3/1000 strokes : 8.0
rack travel mm		+ Check tolerance
Tolerance mm	: <del></del> 0.05	<del>  cm3/1000</del> s. : 12.0
		†
Pressure hPa	: -	†
Rated speed rpm	: 400	
rack travel mm	: 9.15	+ STARTING FUEL DELIVERY
Tolerance mm	: <b>←</b> 0.20	†
		+ Rated speed rpm : 100
MEASUREMENT		+ Del. quantity
<b>5 6 1</b>	/ 00	- cm3/1000 strokes : 235.0
Rated speed rpm	: 400	†

Tolerance cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : +- 24.0

### LOW IDLE

Rated speed rpm 300 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.03.97 Test oil : ISO 4113

Combination No. : 0 402 676 837

### Injection pump

Pump designation : PE6P120A320LS7909 EP type number : 0 412 626 963

### Governor

Governer design. : RSV550...900P0A670 Governer no. : 0 421 833 588

Cust. part No. : 0270743502

Customer-spec. information Customer : MB-NFZ : 0M441 LA Motor Power KW : 236.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

: 130 min. L/h Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x Length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 6-3-5-2-4-

: 1

: 0-60-120-180-240 Phasing

Tolerance : + 0.30

Check

tolerance \*NW : + - 0.50

Start of delivery mark

: + 0.10Tolerance

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 6

#### BASIC SETTING

Rated speed rpm : 880

Rack travel in mm: 15.20

Tolerance mm : + 0.05

+	Aneroid pressure
Del. quantity	hPa : 1200
cm3/1000 strokes : 240.0	Del. quantity
	cm3/1000 strokes : 240.0
Tolerance + 1.0 +	Tolerance cm3/1000 strokes : +- 1.0
chis/ luou strokes : +- 1.0	Check tolerance
Check tolerance	cm3/1000s. : +- 4.0
cm3/1000s. : + 4.0	Spreed
100001	Tolerance
Spreed	cm3/1000 strokes : 6.0
+	Check tolerance
Tolerance	cm3/1000s. : 9.0
cm3/1000 strokes : 6.0	
Check tolerance	
cm3/1000s. : 9.0	CONTROL LEVER
CIID7 19003:	CONTINUE ELVEN
+	control lever
+	position degree : 86.0
Rated speed rpm : 550 +	tolerance degree : +- 4.0
<b>1</b>	
Rack travel in mm : 4.60 + Tolerance mm : + 0.10 +	ASSEMBLY GOVERNOR SETTING
Del. quantity	ASSEMBLE GOVERNOR SETTING
cm3/1000 strokes : 19.0	Rated speed rpm : 930
Tolerance	rack travel mm : 14.20
cm3/1000 strokes : +- 3.0 +	
Check tolerance +	Rated speed rpm : 975
cm3/1000s. : + 6.0	Tolerance 1/min : + 4
Spreed	rack travel mm : 4.00
Tolerance + cm3/1000 strokes : 8.0 +	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 12.0	Rated speed rpm : 1300
+	
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 931
₩ITH GOVERNOR +	rack travel mm : 14.20
Ĭ	Rated speed rpm : 976
	Tolerance 1/min : +- 4
GUIDE SLEEVE POSITION +	rack travel mm : 4.00
+	
+	rack travel mm : 0.85
control lever	Tolerance mm : + 0.55
position degree : -3	Rated speed rpm : 1300
Rated speed rpm : 800	
Rack travel in mm: 0.50	Rated speed rpm : 932
Tolerance mm : + 0.20	rack travel mm : 14.20
+	
governor spring +	Rated speed rpm : 977
pre-tension +	Tolerance 1/min : + 4
click setting x : 2.00	rack travel mm : 4.00
I	rack travel mm : 0.85
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.55
TOLL COMP PECATERY AT TOLL COMP OTO	Rated speed rpm : 1300
Rated speed rpm : 880	

Rated speed rpm	: 933	+ rack travel mm : 2	2.00
rack travel mm		TORQUE CONTROL	
Rated speed rpm Tolerance 1/min rack travel mm	; <del></del> 4	Rated speed rpm : 88 - rack travel mm : 15 - Tolerance mm : + 0	5.20
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1300	Rated speed rpm : 70 - rack travel mm : 15 - Tolerance mm : + 0	5.20
Rated speed rpm rack travel mm	: 14.20	ANEROID/ALTITUDE COMPENSATOR TEST	
Rated speed rpm Tolerance 1/min rack travel mm	: + 4	SETTING	
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1300	Rated speed rpm : 50 Pressure hPa : 120 rack travel mm : 15 Tolerance mm : + 0	00 5.20
Rated speed rpm rack travel mm	: 14.20	Pressure hPa : Rated speed rpm : 50 rack travel mm : 9	7.43
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	Tolerance mm : + 0  MEASUREMENT	J.15
rack travel mm Tolerance mm Rated speed rpm			00 0.80
LOW IDLE		Pressure hPa : 40	
control lever position degree tolerance degree		rack travel mm : 11 Tolerance mm : + 0 Start interlock	
Testing:			<del> </del>
Rated speed rpm rack travel mm Tolerance mm	: 550 : 4.60 : + 0.10	FUEL DELIVERY CHARACTERIS  Aneroid pressure  hPa : 120	
rack travel mm Rated speed rpm Tolerance 1/min		Rated speed rpm : 70 Del. quantity cm3/1000 strokes : 24	
Rated speed rpm	: 100		3.0
CRT mm min.	: > 19.50	+ Check tolerance + cm3/1000s. : +- + Spreed	6.0
SET IDLE AUXILIAR	Y SPRING	Tolerance	8.0

Check tolerance cm3/1000s. 12.0 Aneroid pressure hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 138.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 STARTING FUEL DELIVERY 100 Rated speed rpm : Del. quantity 230.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : + 15.0 LOW IDLE 550 Rated speed rpm Del. quantity 19.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.97 Test oil : ISO 4113

Combination No. : 0 402 696 031

Injection pump

Pump designation : PE6H120/320LS4 EP type number : 0 412 626 001

Governor

Governer design. : RE36

Governer no. : 0 421 890 353

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : OM 441 LA Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 7.00
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Tolerance  $: \leftarrow 0.10$ 

Check

tolerance \*NW : + 0.75

Barrel no. : 6

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION
Engine speed min-1: 0
Setting point (P, R and H pump)
Uact V : 3.100 CRT mm : 13.00 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10
Check value (P, R and H pump)
Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30
Setting point (M pump)
Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10
Check value (M pump)
Uact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30
Stop position
Uact V : Value with
deenergised adjusting magnet and control rod in
stop position.  CRT mm : 0.75  Tolerance mm : +/- 0.25  Check
tolerance mm : +/- 0.35
ENGINE-SPEED SENSOR

Test with control rod in stop position Engine speed min-1: 60 Amplitude V 1.4 : Tolerance V : +/- 0.6 Check : +/- 1.20 tolerance V Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4 (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 750 Rated speed rpm 3.000 Uact V Prestroke solenoid Stroke mm 7.00 Del. quantity cm3/1000 strokes : 375.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s.4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance 9.0 cm3/1000s. FUEL DELIVERY CHARACTERISTICS 1050 Rated speed rpm Uact V 3.000 Prestroke solenoid Stroke mm 7.00 Del. quantity cm3/1000 strokes : 339.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Rated speed rpm 550 2.800 Uact V Prestroke solenoid Stroke mm 8.70 Del. quantity cm3/1000 strokes : 367.0 Tolerance

cm3/1000 strokes

Check tolerance

cm3/1000s.

3.0

6.0

: +-

(All P and R pumps not

H and M pumps)

# TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	: +-	- 0.060
Check tolerance		
Volt	: +	- 0.060
Prestroke solenoi	d	
Stroke mm	:	8.00
Del. quantity		
cm3/1000 strokes	:	25.0
Tolerance		
cm3/1000 strokes	: +	- 3.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenois	d	
Stroke mm	:	10.00
Del. quantity		
cm3/1000 strokes	:	106.0
Tolerance		
cm3/1000 strokes	: +-	6.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.97 Test oil : ISO 4113

Combination No. : 0 402 696 032

Injection pump

Pump designation : PE6H12O/32OLS4-1 EP type number : 0 412 626 002

Governor

Governer design. : RE36

Governer no. : 0 421 890 359

Cust. part No. : C250746402

Customer—spec. information Customer : MB-NFZ Motor : OM 441 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet

temp. \*C : 40 Tolerance \*C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 7.00
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 6

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

	1 A - *16
TOOTTING DAGE TRAUEL OFFICER	+ Test with control rod
TESTING & SETTING RACK TRAVEL SENSOR	† in stop position
POSITION	Toring and a large 40
	+ Engine speed min-1: 60
Engine speed min-1: 0	Amplitude V : 1.4 Tolerance V : +/- 0.6
	+ Tolerance V : +/- U.6
Setting point	+ Check
(P, R and H pump)	+ tolerance V : +/- 1.20
	+
Uact V : 3.100 CRT mm : 13.00	+ Engine speed min-1: 600
CRT mm : 13.00	+ Difference
Tolerance mm : +/- 0.05	+ Amplitude to
Check	+ Amplitude V : max.1.4
tolerance mm : +/- 0.10	+
	+
Check value	+
(P, R and H pump)	+ (C) INJECTION PUMP WITH POSITIONER
	+ .
	+ TEST POINT V1
9act V : 1.700	+
CRT mm : 6.15	Rated speed rpm : 750
Tolerance mm : +/- 0.25	+ Uact V : 3.000
Check	+ Prestroke solenoid
tolerance mm : +/- 0.30	- Stroke mm : 7.00
	+ Del. quantity
	+ cm3/1600 strokes : 375.0
Setting point	+ Tolerance
(M pump)	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
Uact V : 3.100 CRT mm : 12.50	+ cm3/1000s. : +- 4.0
UKI MM : {2.3U	+ Spreed
Tolerance mm : +/- 0.05	† Tolerance
Check	+ cm3/1000 strokes : 5.0
tolerance mm : +/- 0.10	+ Check tolerance
	+ cm3/1000s. : 9.0
Check value	†
(M pump)	+ FUEL DELIVERY CHARACTERISTICS
4 700	1050
Uact V : 1.700	+ Rated speed rpm : 1050
CRT mm : 5.50	+ Uact V : 3.000
Tolerance mm : +/- 0.25	+ Prestroke solenoid + Stroke mm : 7.00
Check	
tolerance mm : +/- 0.30	+ Del. quantity + cm3/1000 strokes : 339.0
Chan manihian	Tolerance
Stop position	- cm3/1000 strokes : +- 3.0
Uact V : Value with	Check tolerance
Uact V : Value with deenergised adjusting magnet	+ cm3/1000s. : + 6.0
and control rod in	I (110) 10003.
stop position.	Rated speed rpm : 550
CRT mm : 0.75	+ Uact V : 2.800
Tolerance mm : +/~ 0.25	+ Prestroke solenoid
Check	+ Stroke mm : 8.70
tolerance mm : +/- 0.35	+ Del. quantity
TO SECURITE STATE OF THE SECURITIES OF THE SECUR	+ cm3/1000 strokes : 367.0
	+ Tolerance
ENGINE-SPEED SENSOR	+ cm3/1000 strokes : + 3.0
(All P and R pumps not	+ Check tolerance
H and M pumps)	+ cm3/1000s. : +- 6.0
and a benibox	1

## TEST POINT L1

Rated speed rpm	:		300
Uact V	•		1.500
Tolerance Volt	•	+-	0.060
Check tolerance			
Volt	:	+-	0.060
Prestroke solenoi	d		
Stroke mm	:		8.00
Del. quantity			
cm3/1000 strokes	:		25.0
Tolerance			
cm3/1000 strokes	:	+-	3.0
Spreed			
Tolerance			
cm3/1000 strokes	:		8.0
Check tolerance			
cm3/1000s.	:		12.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	10.00
Del. quantity		
cm3/1000 strokes	:	106.0
Tolerance		
cm3/1000 strokes	: +-	6.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.97 Test oil : ISO 4113

Combination No. : 0 402 698 031

Injection pump

Pump designation : PE8H120/320LS3 EP type number : 0 412 628 001

Governor

Governer design. : RE36

Governer no. : 0 421 890 353

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : OM 442 LA Power KW : 370.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 7.00
Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 4- 1

Phasing : 0-45-90-135-180

: -270-315

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

#### Start of delivery mark

Tolerance : + 0.10 Check

tolerance \*NW : +- 0.75

Barrel no. : 8

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

Test with control rod TESTING & SETTING RACK TRAVEL SENSOR in stop position POSITION Engine speed min-1: 60 Amplitude V 1.4 Engine speed min-1: 0 : +/- 0.6 Tolerance V Setting point Check : +/- 1.20 (P, R and H pump) tolerance V Engine speed min-1: 600 3.100 Uact V • 13.00 CRT mm Difference Tolerance mm : +/- 0.05 Amplitude to Amplitude V : max.1.4 Check : +/- 0.10 tolerance mm Check value (P, R and H pump) (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 1,700 Uact V 750 6.15 Rated speed rpm CRT mm : +/- 0.252.800 Uact V Tolerance mm Prestroke solenoid Check 7.40 tolerance mm : +/- 0.30 Stroke mm Del. quantity cm3/1000 strokes : 341.0 Tolerance Setting point cm3/1000 strokes : +-(M pump) Check tolerance 3.100 cm3/1000s. Uact V 4.0 12.50 Spreed CRT mm : +/- 0.05 Tolerance Tolerance mm cm3/1000 strokes : 5.0 Check : +/- 0.10 Check tolerance tolerance mm cm3/1000s. 9.0 Check value FUEL DELIVERY CHARACTERISTICS (amua M) 1.700 Rated speed rpm 950 Uact V 5.50 Uact V 2,900 CRT mm : +/- 0.25 Prestroke solenoid Tolerance mm Stroke mm 8.00 Check Del. quantity cm3/1000 strokes : tolerance mm : +/- 0.30 333.0 Tolerance Stop position cm3/1000 strokes : +-3.0 Check tolerance Uact V : Value with : +cm3/1000s. 6.0 deenergised adjusting magnet and control rod in stop position. Rated speed rpm : 550 0.75 2.700 Uact V CRT mm : +/- 0.25 Prestroke solenoid Tolerance mm 9.50 Stroke mm Check : +/- 0.35 Del. quantity tolerance mm cm3/1000 strokes : 351.0 Tolerance cm3/1000 strokes : +-3.0 ENGINE-SPEED SENSOR Check tolerance (ALL P and R pumps not

cm3/1000s.

: + 6.0

H and M pumps)

## TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	: +-	0.060
Check tolerance		
Volt	: +-	0.060
Prestroke solenoi	d	
Stroke mm	:	8.00
Del. quantity		
cm3/1000 strokes	:	23.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

## STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoi	ď	
Stroke mm	:	10.00
Del. quantity		
cm3/1000 strokes	:	108.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 27.02.97 Edition Test oil : ISO 4113

Combination No. : 0 402 698 032

Injection pump

Pump designation : PE8H120/320LS3-1 EP type number : 0 412 628 002

Governor

Governer design. : RE36

: 0 421 890 359 Governer no.

: 0250746502 Cust. part No.

Customer-spec. information : MB-NFZ Customer Motor : OM 442 LA

TEST BENCH REQUIREMENTS

: 3.2 EHAB Inlet line

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : <del>+-</del> 1.5

: 1 680 750 089 Test lines

8.0 Outside diameter :

3.0 x inside diameter :

600 x Length mm

**REMARKS** 

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

7.00 Prestroke mm : + - 0.05Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm : 10.50 : + 0.50 Tolerance mm

Firing order : 8-7-2-6-3

: - 4- 1

Phasing : 0-45-90-135-180

: -270-315

Tolerance : + - 0.50

Check

: + 0.75tolerance \*NW

Start of delivery mark

: + 0.10Tolerance

Check

tolerance \*NW : + 0.75

Barrel no.

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TECTING & CETTING DACK TRAVEL CENCOR	Test with control rod
TESTING & SETTING RACK TRAVEL SENSOR	in stop position
POSITION	Engine aread min_1. 40
Engine speed min-1: 0	Engine speed min-1: 60
Engine speed min-1: 0	Amplitude V : 1.4 Tolerance V : +/- 0.6
Cotting point	+ Check
Setting point (P, R and H pump)	tolerance V : +/- 1.20
Cr, R dire in posito	I toterance v . 17 1.20
Uact V : 3.100	Engine speed min-1: 600
Uact V : 3.100 CRT mm : 13.00	Difference
Tolerance mm : +/- 0.05	Amplitude to
Check	Amplitude V : max.1.4
tolerance mm : +/- 0.10	1
	+
Check value	<u> </u>
(P, R and H pump)	(C) INJECTION PUMP WITH POSITIONER
	+
	TEST POINT V1
Uact V : 1.700	†
CRT mm : 6.15	Rated speed rpm : 750
Tolerance mm : +/- 0.25	Uact V : 2.800
Check	Prestroke solenoid
tolerance mm : +/- 0.30	Stroke mm : 7.40
·	Del. quantity cm3/1000 strokes : 341.0
Catting point	Tolerance
Setting point (M pump)	- cm3/1000 strokes : +- 1.0
Cri pulips	Check tolerance
Uact V : 3.100	- cm3/1000s. : + 4.0
Uact V : 3.100 - CRT mm : 12.50 -	Spreed
Tolerance mm : +/- 0.05	Tolerance
Check	cm3/1000 strokes : 5.0
tolerance mm : +/- 0.10	Check tolerance
	cm3/1000s. : 9.0
Check value	+
(M pump)	FUEL DELIVERY CHARACTERISTICS
•	+
Uact V : 1.700	Rated speed rpm : 950
CRT mm : 5.50 -	Uact V : 2.900
Tolerance mm : +/- 0.25	Prestroke solenoid
Check -	Stroke mm : 8.00
tolerance mm : +/- 0.30	Del. quantity
Ohan masikilan	+ cm3/1000 strokes : 333.0
Stop position -	Tolerance : +- 3.0
Uact V : Value with	Check tolerance
Uact V : Value with - deenergised adjusting magnet -	- cm3/1000s. : +- 6.0
and control rod in	
stop position.	Rated speed rpm : 550
CRT mm : 0.75 -	Uact V : 2.700
Tolerance mm : +/- 0.25 -	Prestroke solenoid
Check -	Stroke mm : 9.50
tolerance mm : +/- 0.35	Del. quantity
-	cm3/1000 strokes : 351.0
-	Tolerance
ENGINE-SPEED SENSOR -	cm3/1000 strokes : + 3.0
(All P and R pumps not -	Check tolerance
H and M pumps) -	+ cm3/1000s. : $+$ 6.0
	<b>L</b>

## TEST POINT L1

Rated speed rpm Uact V	:	300 1.500	
Tolerance Volt	: +	0.060	
Check tolerance			
Volt	: +-	0.060	
Prestroke solenoi	d		
Stroke mm	:	8.00	
Del. quantity			
cm3/1000 strokes	:	23.0	
Tolerance			
cm3/1000 strokes	: +-	3.0	
Spreed			
Tolerance			
cm3/1000 strokes	:	8.0	
Check tolerance			
cm3/1000s.	:	12.0	

# STARTING FUEL DELIVERY

Uact V : 1.900
Prestroke solenoid
Stroke mm : 10.00
Del. quantity
cm3/1000 strokes : 108.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 28,02,97 Edition : ISO 4113 Test oil

Combination No. : 0 402 746 629

Injection pump

Pump designation : PES6P120A320RS7324 EP type number : 0 412 726 905

Governor

Governer design. : RQ300/1200PA1335 Governer no. : 0 421 801 816

Cust. part No. : 51.11103-7565

Customer-spec. information

Customer : MAN

: D 0826 LOH 15 Motor

Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

2.0 Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : 175 Tolerance l/h:  $\leftarrow$  10.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

**REMARKS** 

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke ma Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance \*NW : **←** 0.50

Start of delivery blocking

Tolerance : **←** 0.10

Check

tolerance \*NW : +- 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45

: +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 190.0	+ Tolerance mm : + 0.10
Tolerance	+ Rated speed rpm : 460 + guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 6.00
	+ Tolerance mm : + 0.10
Check tolerance	+
cm3/1000s, ; +- 4.0	+ Rated speed rpm : 1420
	+ guide sleeve
Spreed	† travel mm : 11.50
	+ Tolerance mm : + 0.50
Tolerance	†
cm3/1000 strokes : 8.0	CUITA OF SECTION
Charle Aslanaus	GUIDE SLEEVE POSITION
Check tolerance	†
cm3/1000s. : 12.0	t control lever
	+ position degree : 109
	+ Rated speed rpm : 600
Rated speed rpm : 300	Traced Speed 1 pill . ODD
Hara speed (pill ) Juu	Rack travel in mm: 20.00
Rack travel in mm : 5.20	+ Tolerance mm : + 0.80
Tolerance mm : + 0.10	+
Del. quantity	+
cm3/1000 strokes : 29.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+
cm3/1000 strokes : +- 3.0	Rated speed rpm : 1200
Check tolerance	+ Aneroid pressure
cm3/1000s. : + 6.0	+ hPa : 1500
Spreed	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 190.0
cm3/1000 strokes : 8.0	† Tolerance
Check tolerance	+ cin3/1000 strokes : + 1.0
cm3/1000s. : 12.0	+ Check tolerance + cm3/1000s. : +- 4.0
	+ Cm5/10005. : 7- 4.0 + Spreed
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	T cm3/1000 strokes : 8.0
MATIC GOACIMION	Check tolerance
	- cm3/1000s. : 12.0
GUIDE SLEEVE TRAVEL	- 10000
	+
Rated speed rpm : 1245	+
guide sleeve	+ CONTROL LEVER
travel mm : 6.37	†
Tolerance mm : + 0.15	+ control lever
The state of the s	position degree : 93.0
Rated speed rpm : 300	tolerance degree : +- 4.0
guide sleeve	T DATED COPER
travel mm : 1.97	+ RATED SPEED + rack travel mm : 11.45
Tolerance mm : + 0.20	
Rated speed rpm : 1200	+ Rated speed rpm : 1245 + Tolerance 1/min : + 8
Rated speed rpm : 1200 guide sleeve	I loter ance than the contract of the contract
travel mm : 6.00	Track travel mm : 4.00
Tolerance mm : + 0.10	Rated speed rpm : 1330
	+ Tolerance 1/min : + 15
Rated speed rpm : 366	
guide sleeve	rack travel mm : 0.25
travel mm : 4.60	Tolerance mm : + 0.25
- · · · · · · · · · · · · · · · · · · ·	•

Rated speed rpm	: 1460 🖠	Rated speed rpm : 500
		Pressure hPa : 140 rack travel mm : 8.95 Tolerance mm : +- 0.05
LOW IDLE	‡	Pressure hPa : 700
control lever position degree	: 74.0	rack travel mm : 11.75 Tolerance mm : + 0.15
tolerance degree	: + 4.0	Start interlock
Testing:	‡	Rated speed rpm : > 215 Rated speed rpm : < 240
Rated speed rpm		, · · ·
rack travel mm Tolerance mm	: 5.20	Check
Tolerance mm	: + 0.10	speed 1/min : > 195 Check
rack travel mm	: 2.00	speed 1/min : < 260
Rated speed rpm	: 365	
Tolerance 1/min		
Rated speed rpm	: 200	FUEL DELIVERY CHARACTERISTICS
	+	Aneroid pressure
CRT mm min.	:> 8.20 +	hPa : 1500
	+	Rated speed rpm : 1000
	<del></del>	Del. quantity
TORQUE CONTROL	†	cm3/1000 strokes : 189.0
	+	Tolerance
Rated speed rpm	: 1200 +	cm3/1000 strokes : + 3.0
rack travel mm	: 12.45	Check tolerance
Tolerance mm	: + 0.05	cm3/1000s. : +- 6.0
Rated speed rpm	: 1000	Aneroid pressure
rack travel mm		hPa : 1500
Tolerance mm		Rated speed rpm : 750
IOSELGIESE IIMI		Del. quantity
Rated speed rpm	: 750	cm3/1000 strokes : 199.0
rack travel mm	: 12.45	Tolerance
Tolerance mm		cm3/1000 strokes : +- 3.0
	+	Check tolerance
	<del>+</del>	cm3/1000S. : +- 6.0
ANEROID/ALTITUDE	+	Annuald manages
COMPENSATOR TEST	†	Aneroid pressure
	Ť	hPa : - Rated speed rpm : 500
CETTING	I	Del. quantity
SETTING	I	cm3/1000 strokes : 129.0
Rated speed rpm	: 500	Tolerance
Pressure hPa	1500	cm3/1000 strokes : +- 1.0
rack travel mm	12.45	Check tolerance
Tolerance mm	: + 0.05	cm3/1000s. : +- 4.0
. U S Q C AN TO Q COM	+	
Pressure hPa	: - +	
Rated speed rpm		
rack travel mm	: 8.60 +	STARTING FUEL DELIVERY
Tolerance mm	: +- 0.20 +	
	+	Rated speed rpm : 100
MEASUREMENT	+	Del. quantity
	+	cm3/1000 strokes : 189.0

Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000s. : + 19.0

LOW IDLE

Rated speed rpm 300 Del. quantity cm3/1000 strokes : 29.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.03.97 Test oil : ISO 4113

Combination No. : 0 402 746 951

Injection pump

Pump designation : PES6P120A720RS7292

EP type number : 0 412 726 939

Governor

Governer design. : RQV350...1150PA1074K

Governer no. : 0 421 815 355

Cust. part No. : 0240747902

Customer-spec. information Customer : MB-NFZ : 0M366LA Motor Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C : +-2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance  $^{\circ}NW$  : + 0.50

Start of delivery blocking

\*NW after s.o.d. : 3.30

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW :  $\leftarrow$  0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

		1	
	14.20 0.05	Rated speed rpm guide sleeve travel mm	: 550 : 3.17
Del. quantity cm3/1000 strokes :	271.0	Tolerance mm	: +- 0.25
Tolerance		Rated speed rpm guide sleeve	: 1480
cm3/1000 strokes : +	1.0	travel mm Tolerance mm	: 13.50 : + 0.50
Check tolerance cm3/1000s. : +-	4.0	GUIDE SLEEVE POSI	TION
Spreed		1	
Tolerance cm3/1000 strokes :	8.0	control lever position degree Rated speed rpm	: - 1 : 1329
Check tolerance cm3/1000S. :	12.0	Rack travel in mm Tolerance mm	13.00 : + 1.30
Rated speed rpm :	350	FULL LOAD DELIVER	Y AT FULL LOAD STOP
	6.00 0.10	Rated speed rpm Aneroid pressure	: 1150
Del. quantity		→ hPa	: 1500
cm3/1000 strokes : Tolerance	13.0	+ Del. quantity + cm3/1000 strokes	: 271.0
cm3/1000 strokes : +-	3.0	Tolerance cm3/1000 strokes	: <del></del> 1.0
Check tolerance cm3/1000s. : +-	6.0	+ Check tolerance	
Spr <del>ee</del> d Tolerance		+ cm3/1000s. + Spreed	: + 4.0
cm3/1000 strokes :	4.0	+ Tolerance	
Check tolerance cm3/1000s. :	8.0	+ cm3/1000 strokes + Check tolerance	: 8.0
CIND/ 10005.		cm3/1000s.	: 12.0
(B) SETTING OF INJECTION WITH GOVERNOR	N PUMP	<u> </u>	
		CONTROL LEVER	
GUIDE SLEEVE TRAVEL	•	control lever	: 109.0
Rated speed rpm : 12 guide sleeve	205	position degree tolerance degree	
travel mm :	9.35	RATED SPEED	47.00
Tolerance mm : +-	0.15	rack travel mm Rated speed rpm	: 13.20 : 1195
	350	Tolerance 1/min	: 5
guide sleeve travel mm :	1.53	rack travel mm	: 4.00
Tolerance mm : +-	0.20	Rated speed rpm Tolerance 1/min	: 1320 : ← 15
Rated speed rpm : 8 guide sleeve	355	t rack travel mm	: 0.70
travel mm :	5.56	Tolerance mm	: +- 0.70
Tolerance mm : +-	0.25	+ Rated speed rpm	: 1400

LOW IDLE	
control lever position degree tolerance degree	: 65.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.00 : ← 0.10
Rated speed rpm	: 250
CRT mm min.	: > 6.88
Rated speed rpm	: 400
TORQUE CONTROL	
Rated speed rpm rack travel mim Tolerance mm	: 1150 : 14.20 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 13.80 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.20 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1150 : 1500 : 14.20 : + 0.05
Pressure hPa Rated speed rpm rack travel ma Tolerance mm	: - : 1150 : 10.90 : ← 0.15
MEASUREMENT	
Rated speed rpm	: 1150

rack travel mm Tolerance mm	: 11.70 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 850 : 13.60 : ← 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 250
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1500 : 750
Del. quantity cm3/1000 strokes Tolerance	: 262.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed	: <del>+</del>
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 162.0
cm3/1000 strokes Check tolerance	: ← 1.0
cm3/1000s.	: <del>+</del> 4.0
CTARTING SUEL ASI	THERY
STARTING FUEL DEL	
MATON CHOON PAN	- J(R)

Rated speed rpm	:	700
rack travel mm	:	13.70
Tolerance mm	: +-	0.20
Del. quantity		
cm3/1000 strokes	:	158.0
Tolerance		
cm3/1000 strokes	: +-	15.0
Check tolerance		
cm3/1000s.	: +-	19.0

# LOW IDLE

Rated speed rpm	:	350
Del. quantity cm3/1000 strokes	:	13.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.		6.0
Spreed	: -	6.0
Tolerance cm3/1000 strokes	:	4.0
Check tolerance cm3/1000s.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.03.97 Test oil : U4.U3.97

Combination No. : 0 402 746 956

Injection pump

Pump designation : PES6P120A720RS7292 EP type number : 0 412 726 939

Governor

Governer design. : RQV350...1150PA1074

: 1K

Governer No. : 0 421 815 365

Cust. part No. : 0250740902

Customer-spec. information Customer : MB-NFZ : 0M366LA Motor Power KW : 142.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

: 40 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 100 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05 Check

tolerance mm : ← 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Tolerance : 0-60-120-180-240

Check

tolerance \*NW : + 0.50

Start of delivery blocking

\*NW after s.o.d. : 3.30 Tolerance  $: \leftarrow 0.10$ 

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1150

L01

Rack travel in mm: 14.20	Poted speed spe
Tolerance mm : +- 0.05	Rated speed rpm : 540 guide sleeve
	travel mm : 3.09
Del. quantity	Tolerance mm : +- 0.25
cm3/1000 strokes : 266.0	
1	Rated speed rpm : 1480
Tolerance	guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 13.50
	Tolerance mm : +- 0.50
Check tolerance	
cm3/1000s. : + 4.0	
Chand	GUIDE SLEEVE POSITION
Spreed	
Tolerance	control lever
cm3/1000 strokes : 8.0	position degree : - 1
11107 1000 001 0100	Rated speed rpm : 1331
Check tolerance	The second of th
cm3/1000s. : 12.0	Rack travel in mm : 13.50
	Tolerance mm : +- 1.30
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 6.00	Rated speed rpm : 1150
Tolerance mm : + 0.10	Aneroid pressure
Del. quantity	hPa : 1500
cm3/1000 strokes : 13.0	Del. quantity
Tolerance	cm3/1000 strokes : 266.0
cm3/1000 strokes : +- 3.0 +	Tolerance
Check tolerance +	cm3/1000 strokes : + 1.0
cm3/1000s. : + 6.0 +	Check tolerance
Spreed	cm3/1000s. : +- 4.0
Tolerance +	Spreed
cm3/1000 strokes : 4.0 + Check tolerance	Tolerance cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	cm3/1000 strokes : 8.0 Check tolerance
1.0003.	cm3/1000s. : 12.0
1	. 12.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	
+	CONTROL LEVER
GUIDE SLEEVE TRAVEL +	control loven
GOIDE STEERE HAVET	control lever position degree : 109.0
Rerted speed rpm : 1206	tolerance degree : +- 4.0
guide sleeve	total diliga dagi da i . T.O
travel mm : 9.35	RATED SPEED
Tolerance mm : + 0.15	rack travel mm : 13.50
+	Rated speed rpm : 1195
Rated speed rpm : 350	Tolerance 1/min : +- 5
guide sleeve +	
travel mm : 1.53	rack travel mm : 4.00
Tolerance mm : + 0.20	Rated speed rpm : 1325
Ratted speed rpm : 855	Tolerance 1/min : +- 15
Rarted speed rpm : 855 + guide sleeve +	rack travel mm : 0.70
travel mm : 5.56	Tolerance mm : + 0.70
Tolerance mm : + 0.25	Rated speed rpm : 1400
L02	

FOM IDE	
control lever position degree tolerance degree	: 65.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.00 : +- 0.10
Rated speed rpm	: 250
CRT mm min.	: > 6.90
Rated speed rpm	: 400
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 14.20 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 14.00 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.50 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1150 : 1500 : 14.20 : ← 0.05
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 1150 : 10.50 : + 0.15
MEASUREMENT	
Rated speed rpm	: 1150
Pressure hPa	: 350

rack travel mm Tolerance mm	: 11.10 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 850 : 13.00 : ← 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 240
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	RACTERISTICS : 1500 : 750
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 750
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 750
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1500 : 750 : 269.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1500 : 750 : 269.0 : +- 2.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1500 : 750 : 269.0 : +- 2.0 : +- 5.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1500 : 750 : 269.0 : +- 2.0 : +- 5.0 : 8.0

# STARTING FUEL DELIVERY

Del. quantity cm3/1000 strokes :

Check tolerance cm3/1000s.

cm3/1000 strokes : +-

Tolerance

134.0

: +- 4.0

1.0

Rated speed rpm rack travel mm	:	100 13.50
Tolerance mm	: +-	0.20
Del. quantity cm3/1000 strokes	:	150.0
Tolerance cm3/1000 strokes	: +-	15.0
Check tolerance cm3/1000s.	: +-	19.0

## LOW IDLE

Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.03.97 Edition Test oil : ISO 4113

Combination No. : 0 402 746 957

Injection pump

Fump designation : PES6P120A720RS7292 EP type number : 0 412 726 939

Governor

Governer design. : RQV350...1150PA1074

Governer no. : 0 421 815 367

Cust. part No. : 0250741002

Customer-spec. information Customer : MB-NFZ Motor : 0M366LA Power KW : 157.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 100 Tolerance L/h : +- 20.0

Test nozzle holde assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50Tolerance mm :  $\leftarrow 0.50$ 

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance \*NW : **←** 0.50

Start of delivery blocking

\*NW after s.o.d. : 3.30 Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

L05

Rack travel in mm Tolerance mm	: 14.10 : + 0.05
Del. quantity cm3/1000 strokes	: 269.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Rated speed rpm	: 350
Rack travel in mm	: 6.00
Tolerance mm	: +- 0.10
Del. quantity cm3/1000 strokes	: 13.0
Tolerance	
cm3/1000 strokes Check tolerance	: + 3.0
cm3/1000s.	: <del>+</del> 6.0
Spreed Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance cm3/1000s.	: 8.0
CM5/10005.	: 8.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP
GUIDE SLEEVE TRAV	EL
Rated speed rpm	: 1206
guide sleeve travel mm	: 9.35
Tolerance mm	: 9.35 : + 0.15
Rated speed rpm	: 350
guide sleeve travel mm	: 1.53
Tolerance mm	: + 0.20
Rated speed rpm	: 855
guide sleeve travel mm	: 5.56
Travel mm Tolerance mm	: + 0.25

Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 550 : 3.17 : ← 0.25 : 1480 : 13.50 : ← 0.50
GUIDE SLEEVE POSIT	TION
control lever position degree Rated speed rpm	: - 1 : 1331
Rack travel in mm Tolerance mm	: 13.50 : + 1.30
FULL LOAD DELIVERY	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	
CONTROL LEVER	
control lever position degree tolerance degree	: 109.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 13.40 : 1195 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1325 : + 15
rack travel mm Tolerance mm Rated speed rpm	: 0.70 : +- 0.70 : 1400

LOW IDLE	
control lever position degree tolerance degree	: 65.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.00 : ← 0.10
Rated speed rpm	: 250
CRT mm min.	: > 6.90
Rated speed rpm	: 400
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 14.10 : ← 0.05
Rated speed rpm rack travel am Tolerance mm	: 950 : 13.95 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.40 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1150 : 1500 : 14.10 : ← 0.05
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 1150 : 10.10 : + 0.15
MEASUREMENT	
Rated speed rpm	: 1150

rack travel mm Tolerance mm	: 10.90 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 850 : 12.50 : + 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 200
Check speed 1/min Check	: > 80
speed 1/min	: < 250
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance cm3/1000s.	: +· 2.0 : +- 5.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 500 : 120.0 : + 1.0
cm3/1000s.	: +- 4.0

# STARTING FUEL DELIVERY

:		100
:		13.50
:	+-	0.20
:		150.0
:	+-	15.0
÷	+	19.0
	:	: +-

Pressure hPa : 400

# LOW IDLE

Rated speed rpm Del. quantity	:	350	
cm3/1000 strokes Tolerance	:	13.0	
cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s. Spreed	; +-	6.0	
Tolerance cm3/1000 strokes Check tolerance	:	4.0	
cin3/1000s.	:	8.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 28.02.97 Edition Test oil : ISO 4113

Combination No. : 0 402 746 967

Injection pump

Pump designation : PES6P120A320RS7324 EP type number : 0 412 726 905

Governor

Governer design. : RQ300/1200PA1132 Governer nc. : 0 421 801 708

Cust. part No. : 51.11103-7296

Customer-spec. information

Customer : MAN

: D0826LF11/LFL03 Motor

Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 175 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x i≈nside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.15 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 12.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Tolerance : 0-60-120-180-240

Check

tolerance \*NW : +- 0.50

Start of delivery blocking

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm: 12.45

Tolerance mm :  $\leftarrow$  0.05

Del. quantity			
cm3/1000 strokes	: 190.0	+ Tolerance mm : +-	0.10
Tolerance		Rated speed rpm : guide sleeve	530
cm3/1000 strokes	: + 1.0	+ travel mm :	6.00 0.10
Check tolerance cm3/1000s.	: + 4.0	+	430
Spreed		guide sleeve travel mm :	11.50
		† Tolerance mm : +-	0.50
Tolerance cm3/1000 strokes	: 8.0		
Check tolerance		GUIDE SLEEVE POSITION	
cm3/1000s.	: 12.0	control lever	
		position degree :	109
		1 · · · · · · · · · · · · · · · · · · ·	600
Rated speed rpm	: 300	hateu speed i piii :	
, ,		Rack travel in mm:	20.00
Rack travel in mm	: 5.20	•	0.80
Tolerance mm	: + 0.10	+	
Del. quantity		+	
cm3/1000 strokes	: 29.0	FULL LOAD DELIVERY AT F	TULL LOAD STOP
Tolerarice			
cm3/1000 strokes	: <del></del>		200
heck tolerance		Aneroid pressure	
	: +- 6.0	N Company of the Comp	500
Spreed		+ Del. quantity	
Tolerance		The state of the s	190.0
cm3/1000 strokes	: 8.0	+ Tolerance	
Check tolerance	40.0	+ cm3/1000 strokes : +-	1.0
cm3/1000s.	: 12.0	+ Check tolerance	
		+ cm3/1000s. : +-	4.0
		Spreed	
(5) CETTING AC THE	E	<u> </u>	
	ECTION PUMP	Tolerance	0.0
	ECTION PUMP	+ cm3/1000 strokes :	8.0
	ECTION PUMP	cm3/1000 strokes : Check tolerance	
(B) SETTING OF INJ WITH GOVERNOR		+ cm3/1000 strokes :	8.0 12.0
		cm3/1000 strokes : Check tolerance	
WITH GOVERNOR GUIDE SLEEVE TRAVE		cm3/1000 strokes : Check tolerance cm3/1000s. :	
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve	EL : 1257	cm3/1000 strokes : Check tolerance	
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve  travel mm	EL : 1257 : 6.37	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER	
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve  travel mm	EL : 1257	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER control lever	12.0
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm  guide sleeve  travel mm  Tolerance mm	: 1257 : 6.37 : + 0.10	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree :	97.0
VITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm  guide sleeve  travel mm  Tolerance mm	EL : 1257 : 6.37	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER control lever	12.0
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve  travel mm  Tolerance mm  Rated speed rpm guide sleeve	: 1257 : 6.37 : + 0.10 : 300	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree : tolerance degree : +-	97.0
SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve ravel mm Tolerance mm Rated speed rpm guide sleeve guide sleeve ravel mm	: 1257 : 6.37 : + 0.10 : 300 : 1.41	cm3/1000 strokes : Check tolerance cm3/1000S. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED	97.0 4.0
SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve cravel mm Tolerance mm Rated speed rpm guide sleeve cravel mm	: 1257 : 6.37 : + 0.10 : 300	cm3/1000 strokes : Check tolerance cm3/1000S. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm :	97.0 4.0 11.45
SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve ravel mm Tolerance mm Rated speed rpm guide sleeve ravel mm Tolerance mm	: 1257 : 6.37 : + 0.10 : 300 : 1.41 : + 0.10	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm : Rated speed rpm : 1	97.0 4.0 11.45 245
SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1257 : 6.37 : + 0.10 : 300 : 1.41	cm3/1000 strokes : Check tolerance cm3/1000S. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm :	97.0 4.0 11.45
SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve travel mm Folerance mm Rated speed rpm guide sleeve travel mm Folerance mm Rated speed rpm guide sleeve	EL : 1257 :	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm : Rated speed rpm : 1 Tolerance 1/min : +-	97.0 4.0 11.45 245 8
SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve travel mm Folerance mm Rated speed rpm guide sleeve travel mm Folerance mm Rated speed rpm guide sleeve travel mm Rated speed rpm guide sleeve travel mm	EL : 1257 :	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm : Rated speed rpm : 1 Tolerance 1/min : +-  rack travel mm :	97.0 4.0 11.45 245 8 4.00
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm	EL : 1257 :	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm : Rated speed rpm : 1 Tolerance 1/min : +-  rack travel mm : Rated speed rpm : 1	97.0 4.0 11.45 245 8 4.00 328
SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve ravel mm Tolerance mm Rated speed rpm guide sleeve ravel mm Tolerance mm Rated speed rpm guide sleeve ravel mm Tolerance mm Rated speed rpm guide sleeve ravel mm Tolerance mm	: 1257 : 6.37 : + 0.10 : 300 : 1.41 : + 0.10 : 1200 : 6.00 : + 0.10	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm : Rated speed rpm : 1 Tolerance 1/min : +-  rack travel mm :	97.0 4.0 11.45 245 8 4.00
SUIDE SLEEVE TRAVE Sated speed rpm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve Travel mm Juide sleeve	EL : 1257 :	cm3/1000 strokes: Check tolerance cm3/1000s.:  CONTROL LEVER  control lever position degree: tolerance degree: +-  RATED SPEED rack travel mm: Rated speed rpm: 1 Tolerance 1/min: +-  rack travel mm: Rated speed rpm: 1 Tolerance 1/min: +-	97.0 4.0 11.45 245 8 4.00 328 15
SUIDE SLEEVE TRAVE Rated speed rpm ruide sleeve ravel mm rolerance mm Rated speed rpm ruide sleeve ravel mm rolerance mm Rated speed rpm ruide sleeve ravel mm rolerance mm Rated speed rpm ruide sleeve ravel mm rolerance mm	: 1257 : 6.37 : + 0.10 : 300 : 1.41 : + 0.10 : 1200 : 6.00 : + 0.10	cm3/1000 strokes : Check tolerance cm3/1000s. :  CONTROL LEVER  control lever position degree : tolerance degree : +-  RATED SPEED rack travel mm : Rated speed rpm : 1 Tolerance 1/min : +-  rack travel mm : Rated speed rpm : 1	97.0 4.0 11.45 245 8 4.00 328 15

Rated speed rpm	: 1460	+ Rated speed rpm	: 500
		Pressure hPa rack travel mm Tolerance mm	: 140
		† rack travel mm	: 8.95
LOW IDLE		Tolerance mm	: <del></del> 0.05
COM IVEC		Pressure hPa	: 700
		rack travel mm	: 11.75
control lever		+ Tolerance mm	: +- 0.15
position degree	: 71.0	+	
tolerance degree	: +- 4.0	+ Start interlock	
Testing:		+ Rated speed rpm	: > 100
•		Rated speed rpm Rated speed rpm	: < 220
Rated speed rpm	: 300	The state of the s	
rack travel mm	5.20	+ Check	
rack travel mm Tolerance mm	· + 0 10	speed 1/min	• > 90
- Cerdine imi	0.10	+ Check	. / 00
rack travel mm	2.00	+ speed 1/min	: < 240
Rated cheed non	775	1 Speed Frints	. `
rack travel mm Rated speed rpm Tolerance 1/min	· +- 30		
rocerance inmin	. 1 30	FUEL DELIVERY CH	APACTERISTICS
Rated speed rpm	: 250	+	
		† Aneroid pressure	
CRT mm min.	: > 6.50	+ hPa	: 1500
		hPa Rated speed rpm	: 1000
		——— + Del. quantity	
TORQUE CONTROL		+ cm3/1000 strokes	: 189.0
		+ Tolerance	
Rated speed rpm	: 1200	+ cm3/1000 strokes	: <del></del> 3.0
rack travel mm	: 12.45	+ Check tolerance	•
Rated speed rpm rack travel mm Tolerance mm	: +- 0.05	theck tolerance cm3/1000s.	: +- 60
		1	
Rated speed rpm rack travel mm Tolerance mm	: 1000	+ Aneroid pressure	
rack travel mm	: 12.45	+ hPa	: 1500
Tolerance mm	: +- 0.10	Rated speed rpm	• 750
	0.10	- Del. quantity	. , , , ,
Rated speed rpm	• 750	+ cm3/1000 strokes	· 100 n
rack travel mm		+ Tolerance	. 199.0
Tolerance mm		cm3/1000 strokes	
OCCIONCE (IS)	0.10	+ Check tolerance	3.0
			40
ANEROID/ALTITUDE		T cms/1000s.	: 0.0
COMPENSATOR TEST		Aneroid pressure	
COLUMNIAL LEGI		+ hPa	
		Rated speed rpm	500
SETTING		T Rated Speed rpm	. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
DE LITING		+ Del. quantity	. 100.0
Doted speed	. 500	+ cm3/1000 strokes	: 129.0
Rated speed rpm	: 500	† Tolerance	
Pressure hPa	: 1500	+ cm3/1000 strokes	
rack travel mm	: 12.45	+ Check tolerance	
Tolerance mm	: + 0.05	† cm3/1000s.	: +- 4.0
Pressure hPa	: -	+	
Rated speed rom	: 500		
rack travel mm	8.60	STARTING FUEL DE	_IVFRY
rack travel mm Tolerance mm	: + 0.20	1	
	. 0.20	Rated speed rpm	: 100
MEASUREMENT		Del. quantity	
······································		+ cm3/1000 strokes	· 189 n
		, the food strokes	. 107.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance cm3/1000s. : + 19.0

## FOM IDE

Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 29.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.02.97 Test oil : ISO 4113

Combination No. : 0 403 476 148

Injection pump

Pump designation : PES6MW100/720RS1131

EP type number : 0 413 406 123

Governor

Governer design. : RSY350...1200MW0A405

Governer no. : 0 420 085 294

Cust. part No. : 0270741802

Customer-spec. information Customer : MB-NFZ : OM 366 A Motor

Power KW : 118.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 ÷ + 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : +- 1.0

: 3.75 : + 0.05 Prestroke mm Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

: **0-60-120-180-**240 Phasing Tolerance Phasing

: **←** 0.50

Check

tolerance °NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm : 11.65 Tolerance mm:  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 89.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

: +- 3.0 cm3/1000s.

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	
	CONTROL LEVER
Rated speed rpm : 350	control lever position degree : 107.0 tolerance degree : + 4.0
Rack travel in mm: 6.30 Tolerance mm: + 0.25 Del. quantity	RATED SPEED rack travel mm : 10.65
cm3/1000 strokes : 12.0	Rated speed rpm : 1233 Tolerance 1/min : + 3
cm3/1000 strokes : + 2.0 + Check tolerance	
cm3/1000s. : + 4.5 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1315 Tolerance 1/min : +- 5
cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 1.00 Tolerance mm : + 0.70
cm3/1000s. : 5.5	Rated speed rpm : 1400
(3) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever
Ţ.	position degree : 81.0 tolerance degree : + 4.0
control lever position degree : -3 Rated speed rpm : 800	Testing:
Rack travel in min: 0.65	Rated speed rpm : 350 rack travel mm : 6.30
Tolerance mm : + 0.35	Tolerance mm : + 0.25
governor spring pre-tension	rack travel mm : 2.00 Rated speed rpm : 450
click setting x : 5.25	Tolerance 1/min : ← 30
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 100
Rated speed rpm : 1180	CRT mm min. : > 19.00
Aneroid pressure hPa : 800	TORQUE CONTROL
Del. quantity cm3/1000 strokes : 89.0	Rated speed rpm : 1180
Tolerance cm3/1000 strokes : +- 1.0	rack travel mm : 11.65 Tolerance mm : +- 0.05
Check tolerance cm3/1000s. : + 3.0	Rated speed rpm : 800
Spreed + Tolerance + 7.7	rack travel mm : 12.00 Tolerance mm : + 0.10
cm3/1000 strokes : 3.5	Rated speed rpm : 1100

rack travel mm Tolerance mm	: 11.75 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 800 : 12.00 : ← 0.10
Pressure hPa Rated speed rpm Tolerance mm	: - : 500 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 350 : 1.10 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 275 : 0.65 : ← 0.10
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 800 : 800
cm3/1000 strokes Tolerance	: 88.0
cm3/1000 strokes Check tolerance	: <del>+</del> 1.5
cm3/1000s. Spreed	: ← 4.0
Tolerance cm3/1000 strokes Check tolerance	: 5.0
cm3/1000s.	: 7.0
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 500
7/4000	. 50.0

Check tolerance cm3/1000s. : + 3.0 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes : +- 5.0Check tolerance cm3/1000s. : +- 8.0 LOW IDLE Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.5

End of test specification sheet

Tolerance

cm3/1000 strokes :

cm3/1000 strokes :  $\leftarrow$  1.0

50.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.03.97 Test oil : ISO 4113

Combination No. : 0 400 863 024

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A5C917L

Governer no. : 0 420 232 639

Cust. part No. : 0423 2328 KY

Customer—spec. information Customer : KHD-DMI Motor : F3L912 Power KW : 44.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50
Tolerance mm : +- 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240 Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance - 8.0	
	CONTROL LEVER
Rated speed rpm : 325	control lever position degree : 102.0 tolerance degree : + 4.0
Rack travel in mm: 8.50	
Tolerunce ma : + 0.10	RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0	
Check tolerance cm3/1000s. : +- 4.5	rack travel nam : 4.00 Rated speed rpm : 1340
Spreed -	- Tolerance 1/min : +- 15
Tolerance	
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 9.9	Rated speed rpm : 1510
4	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1360
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
position degree : FREE -	position degree : 69.0
Rated speed rpm : 800 -	tolerance degree : + 4.0
Rack travel in mm: 0.50 - Tolerance mm: + 0.20 -	- Setting point w/out bumper spring
Total de limit	Rated speed rpm : 325
governor spring	
pre-tension	rack travel mm : 8.00 Tolerance mm : +- 0.10
click setting x : 3.00	-
1	Testing:
EUL LOAD DELTUEDY AT CULL LOAD CTOD	Detect aread are 225
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325 rack travel mm : 8.50
Rated speed rpm : 1250	Tolerance mm : 6.50
Aneroid pressure	
hPa : -	rack travel mm : 2.00
Del. quantity	Rated speed rpm : 475
cm3/1000 strokes : 76.0	Tolerance 1/min : +- 30
Tolerance	
cm3/1000 strokes : + 1.0	Rated speed rpm : 100
Check tolerance	
cm3/1000s. : +- 3.0 Spreed	- CRT mm min. :> 19.50
Tolerance -	TODOUE CONTROL
cm3/1000 strokes : 3.5	TORQUE CONTROL
1	Г

Rated speed rpm : 1250 rack travel mm : 11.35 : **←** 0.05 Tolerance mm

Rated speed rpm : 500

Start interlock

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 17.00 rack travel non : +- 0.75 Tolerance mm Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

325 Rated speed rpm :

Del. quantity cm3/1009 strokes : 11.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. : +-4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.9

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.03.97 Test oil : ISO 4113

Combination No. : 0 400 864 102

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type rumber : 0 410 894 995

Governor

Governer design. : RSV325...1250A5c861L

Governer no. : 0 420 232 624

Cust. part No. : 0423 1789 KY

Customer-spec. information

Customer : KHD-DMI

: F4L912/913\_NEU Motor

Power KW : 59.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temo. °C : 40 : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travei in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270 Tolerance : + 0.05

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

: + 3.0 cm3/1000s.

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	<del>+</del>
Rated speed rpm : 325	control lever position degree : 102.0 tolerance degree : + 4.0
Rack travel in mm : 8 50 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 11.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 5.5	RATED SPEED rack travel mm : 10.35 Rated speed rpm : 1295 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 1339 Tolerance 1/min : +- 15  rack travel mm : 0.85
Chack tolerence cm3/1000s. : 9.0	Tolerance mm : +- 0.55 Rated speed rpm : 1510
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1360
GUIDE SLEEVE POSITION	LOUIZNIS
GOIDE SEELVE FOSTITON	+ LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 69.0 tolerance degree : +- 4.0
control lever position degree : FREE	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 69.0 tolerance degree : +- 4.0
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	control lever position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Festing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : +- 0.05

Rated speed rpm : 500

Start interlock

### STARTING FUEL DELIVERY

100 Rated speed rpm : rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 130.0

Tolerance cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

325 Rated speed rpm :

Del. quantity

cm3/2000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

9.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10,03.97 Edition Test oil : 10.03.97

Combination No. : 0 400 864 104

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1250A5C877L

Governer no. : 0 420 232 632

Cust. part No. : 0423 2047 KY

Customer-spec. information Customer : KHD-DMI : BF4L 913 C Motor Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 12.70

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 92.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : **←** 3.0

Tolerance cm3/1000 strokes : 3.5 Check tolerance	Check tolerance cm3/1000s. : 8.0
cm3/1000s. : 8.0	CONTROL LEVER
Rated speed rpm : 325	<pre>control lever position degree : 102.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 8.50 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 11.5 Tolerance cm3/1000 strokes: + 2.0	RATED SPEED rack travel mm : 11.70 Rated speed rpm : 1295 Tolerance 1/min : + 5
Check tolerance cm3/1000S. : + 4.5 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1350 Tolerance 1/min : +- 15
cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1520
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1370
GUIDE SLEEVE POSITION	LOW IDLE
Ţ	
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 67.0 tolerance degree : +- 4.0
position degree : FREE +	position degree : 67.0 tolerance degree : + 4.0 Setting point w/out bumper spring
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 67.0 tolerance degree : +- 4.0
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 325 rack travel mm : 325 rack travel mm : 325 rack travel mm : 8.50
position degree : FREE Rated speed rpm : 800  Rsck travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 480
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 92.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 92.0 Tolerance	position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 rack travel mm : 2.00 Rated speed rpm : 480 Tolerance 1/min : + 30

Rated speed rpm : 1250 12.70 rack travel mm Tolerance mm : +- 0.05

Rated speed rpm 500

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 20.25 : **←** 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.03.97 Test oil : ISO 4113

combination No. : 0 400 864 105

Injection pump

Pump designation : PES4A95D410/3RS2789 EP type number : 0 410 894 995

Governor

Governer design. : RSV325...900A1c878L

Governer no. : 0 420 232 633

Cust. part No. : 0423 2062 KY

Customer-spec. information Customer : KHD-DMI : BF4L 913 Motor Power KW : 64.0

### TEST BENCH REQUIREMENT'S

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05 Check

: + 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.30

Del. quantity cm3/1000 strokes : 92.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

	+
Check tolerance cm3/1000S. : 8.0	CONTROL LEVED
cm3/10UOS. : 8.0	CONTROL LEVER
	T control lever
	position degree : 89.0
Rated speed rpm : 325	tolerance degree : + 4.0
	+
Rack travel in mm : 8.20	+ RATED SPEED
Del. quantity	+ rack travel mm : 12.30
cm3/1000 strokes : 11.5	+ Rated speed rpm : 895
Tolerance	† Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0	†
Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 4.00 Rated speed rpm : 940
Spreed	Tolerance 1/min : + 10
Tolerance	Tocarance mini . The 10
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	+ Tolerance mm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1090
	†
	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 955
WITH GOVERNOR	†
	1
GUIDE SLEEVE POSITION	LOW IDLE
	+
	+
control lever	+ control lever
position degree : FREE	position degree : 67.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm : 0.50	T Setting point w/out bumper spring
Tolerance mm : + 0.20	- occorning points wrote bumper spring
	Rated speed rpm : 325
governor spring	+ rack travel mm : 7.70
pre-tension	Tolerance mm : + 0.10
click setting x : 2.25	+
	† Testing:
FILL LOAD DELIVEDY AT ELLE LOAD STOD	+ Rated speed rpm : 325
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325 rack travel mm : 8.20
Rated speed rpm : 850	T rack travet min . 0.20
Aneroid pressure	rack travel mm : 2.00
hPa : -	Rated speed rpm : 415
Del. quantity	+ Tolerance 1/min : + 30
cm3/1000 strokes : 92.0	<b>†</b>
Tolerance	Rated speed rpm : 100
cm3/1000 strokes : +- 1.0	10.00
Check tolerance cm3/1000s. : +- 3.0	+ CRT mm min. :> 19.50
cm3/1000s. : +- 3.0 Spreed	Ī
Tolerance	TORQUE CONTROL
cm3/1000 strokes : 3.5	TONGOE GOVERNOE
Check tolerance	Rated speed rpm : 850
cm3/1000s. : 8.0	rack travel mm : 13.30
	+
	Rated speed rpm : 500

## Start interlock

## STARTING FUEL DELIVERY

100 Rated speed rpm : rack travel mm : 20.25 Tolerance mm : +- 0.75

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance cm3/1000s. : +-4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.03.97 Test oil : ISO 4113

Combination No. : 0 400 864 107

Injection pump

Pump designation : PES4A95D410/3RS2913

EP type number : 0 410 894 986

Governor

Governer design. : RSV325...900A1C859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 2225 KY

Customer-spec. information

Customer : KHD-DMI

: F4L912/Neu.comor Motor

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temo. °C : 40 : + 2.0 40 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : ← 1.50

Firing order : 1-3-2

: 0-90-270 Phasing

Tolerance : +- 0.50

Check

tolerance \*NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm: 11.80

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: + 3.0 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance	+
cm3/1000s. : 8.0	CONTROL LEVER
	t control loves
Rated speed rpm : 325	control lever position degree : 90.0
Rated speed rpm : 325	tolerance degree : +- 4.0
Rack travel in mm: 7.90	+ total unite degree
Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity	+ rack travel mm : 10.80
cm3/1000 strokes : 11.5	+ Rated speed rpm : 895
Tolerance	+ Tolerance 1/min : ← 5
cm3/1000 strokes : + 2.0	t much thought an a 4 00
Check tolerance cm3/1000s. : +- 4.5	+ rack travel mm : 4.00 + Rated speed rpm : 920
cm3/1000s. : +- 4.5 Spreed	+ Rated speed rpm : 920 + Tolerance 1/min : + 10
Tolerance	Total direction in the second
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	+ Tolerance mm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1090
	+
	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 940
WITH GOVERNOR	†
	†
	I
GUIDE SLEEVE POSITION	+ LOW IDLE
	+
	t
control lever	+ control lever
position degree : FREE	position degree : 68.0
Rated speed rpm : 800	tolerance degree : + 4.0
Rack travel in mm: 0.50	Setting point w/out bumper spring
Tolerance mm : + 0.20	
	Rated speed rpm : 325
governor spring	rack travel mm : 7.40
pre-tension	+ Tolerance mm : + 0.10
click setting x : 2.50	+
	+ Testing:
MULLIAR DELTURBY AT PULLIAR OTOR	Posted aread area : 725
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325 rack travel mm : 7.90
Rated speed rpm : 850	+ rack travel mm : 7.90 + Tolerance mm : + 0.10
Rated speed rpm : 850 Aneroid pressure	I roterance min : - 0.10
hPa : -	rack travel mm ; 2.00
Del. quantity	Rated speed rpm : 415
cm3/1000 strokes : 80.0	Tolerance 1/min : + 30
Tolerance	+
cm3/1000 strokes : + 1.0	Rated speed rpm : 100
Check tolerance	+
$cm3/1000s.$ : $\leftarrow$ 3.0	+ CRT mm min. : > 19.50
Spreed	+
Tolerance	Tannus courses
cm3/1000 strokes : 3.5	+ TORQUE CONTROL
Check tolerance	Dated around name a 950
cm3/1000s. : 8.0	+ Rated speed rpm : 850 + rack travel mm : 11.80
	+ rack travel mm : 11.80 + Tolerance mm : + 0.05
	T TOTELONICE INTO A 1 U.U.J

Rated speed rpm : 500

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm 100 20.25 rack travel mm : + 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  7.5

Check tolerance

cm3/1000s. : + 10.0

## LOW IDLE

325 Rated speed rpm :

Del. quantity

11.5 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cii.3/1000s. 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.03.97 Test oil : ISO 4113

Combination No. : 0 400 865 028

Injection pump

Pump designation : PES5A95D410/3RS2906

EP type number : 0 410 895 971

Governor

Governer design. : RSV325...1250A5C858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1598 KY

Customer-spec. information

Customer : KHD-DMI

Motor : F5L912/913\_NEU

Power KW : 67.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : ← 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.80 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 70.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance cm3/1000 strokes : 3.5 Check tolerance	Check tolerance cm3/1000s. : 8.0
cm3/1000s. : 8.0	
	CONTROL LEVER
Ī	control lever
Rated speed rpm : 325	position degree : 102.0
+	tolerance degree : + 4.0
Rack travel in mm: 8.50 + O.10 +	RATED SPEED
Del. quantity	rack travel mm : 9.80
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance +	Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0	rack travel mm : 4.00
Check tolerance cm3/1000s. : + 4.5	rack travel mm : 4.00 Rated speed rpm : 1339
Spreed	Tolerance 1/min : + 15
Tolerance +	
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance + cm3/1000s. : 9.0 +	Tolerance mm : + 0.55 Rated speed rpm : 1510
CHS/10003	Naced Speed (pill : 1510
+	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1360
WITH GOVERNOR ±	
Ţ	
GUIDE SLEEVE POSITION	LOW IDLE
Ĭ	
control lever	control lever
position degree : FREE +	position degree : 69.0
Rated speed rpm : 800 +	tolerance degree : + 4.0
Rack travel in mm: 0.50	Setting point w/out bumper spring
Tolerance mm : + 0.20 +	
+	Rated speed rpm : 325
governor spring	rack travel mm : 8.00 Tolerance mm : +- 0.10
pre-tension + click setting x : 3.25 +	roterance man . +- 0.10
teres sections x	Testing:
	705
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325
Rated speed rpm : 1250	rack travel mm : 8.50 Tolerance mm : + 0.10
Aneroid pressure	
hPa : - +	rack travel mm : 2.00
Del. quantity + cm3/1000 strokes : 70.0 +	Rated speed rpm : 482 Tolerance 1/min : +- 30
cm3/1000 strokes : 70.0	Toterance Timin : +- 30
cm3/1000 strokes : + 1.0 +	Rated speed rpm : 100
Check tolerance +	
cm3/1000s. : + 3.0	CRT mm min. : > 19.50
	CITE 1811 111111
Spreed	
Spreed Tolerance	TORQUE CONTROL
Spreed +	

Rated speed rpm : 1250 rack travel mm 10.80 Tolerance mm : +- 0.05

Rated speed rpm 500

Start interlock

## STARTING FUEL DELIVERY

100 Rated speed rpm 20.25 rack travel mm : : + 0.75 Tolerance mm Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  7.5

Check tolerance

cm3/1000s. : + 10.0

### LOW IDLE

Rated speed rpm 325

Del. quantity

11.5 cm3/1000 strokes :

Tolerance

2.0 cm3/1000 strokes : +-

Check tolerance cm3/1000s.

Spreed

Tolerance

5.5 cm3/1000 strokes :

Check tolerance

cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.03.97 Test oil : ISO 4113

Combination No. : 0 400 866 222

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1601 KY

Customer—spec. information Customer : KHD-DMI

Motor : F6L912/913 NEU

Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance cm3/1000 strokes : 3.5 Check tolerance	Check tolerance cm3/1000s. : 8.0
cm3/1000s. : 8.0	CONTROL LEVER
+	
Rated speed rpm : 325	control lever  position degree : 102.0  tolerance degree : +- 4.0
Rack travel in mm: 8.50 Tolerance mm: + 0.10	RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance + 2.0 +	Tolerance 1/min : +- 5
Check tolerance +	rack travel mm : 4.00
cm3/1000s. : + 4.5 +	Rated speed rpm : 1339 Tolerance 1/min : +- 15
Tolerance +	
cm3/1000 strokes : 5.5	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1510
†	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1360
Į	
GUIDE SLEEVE POSITION	LOW IDLE
+	
+	control lever
control lever position degree : FREE	control lever position degree : 69.0
control lever	
control lever position degree : FREE	position degree : 69.0 tolerance degree : + 4.0 Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring	position degree : 69.0 tolerance degree : + 4.0 Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 325 rack travel mm : 525 rack travel mm : 8.50
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : -	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : +- 0.05

Rated speed rpm : 750

Start interlock

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  7.5

Check tolerance

cm3/1000s. : +- 10.0

#### LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.03.97 Test oil : ISO 4113

Combination No. : 0 400 866 223

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...900A1C859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1602 KY

Customer-spec. information

Customer : KHD-DMI

Motor : F6L912/913\_NEU

Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm: 11.80
Tolerance mm: + 0.05

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance +	
cm3/1000 strokes : 3.5	
Check tolerance +	CONTROL LEVER
cm3/1000s. : 8.0	
<u> </u>	control lever
+	position degree : 90.0
+	tolerance degree : + 4.0
Rated speed rpm : 325	
+	RATED SPEED
Rack travel in mm: 7.90	rack travel mm : 10.80
Del. quantity	Rated speed rpm : 895
cm3/1000 strokes : 11.5	Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 920
cm3/1000s. : + 4.5	Tolerance 1/min : + 10
Spreed	
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : + 0.55
Check tolerance	Rated speed rpm : 1090
cm3/1000s. : 9.0	
1.000	rack travel mm : 4.00
1	Rated speed rpm : 940
(B) SETTING OF INJECTION PUMP	The second secon
WITH GOVERNOR +	
WITH GOVERNOR	
1	
<u> </u>	LOW IDLE
GUIDE SLEEVE POSITION	
401DE 3EEE4E 1031/10/4	
1	control lever
control leven	control lever
control lever	position degree : 68.0
position degree : FREE +	
	position degree : 68.0 tolerance degree : +- 4.0
position degree : FREE + Rated speed rpm : 800 +	position degree : 68.0
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50	position degree : 68.0 tolerance degree : +- 4.0 Setting point w/out bumper spring
position degree : FREE + Rated speed rpm : 800 +	position degree : 68.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 68.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 68.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 68.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : -	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.50
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.50
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.50  TORQUE CONTROL  Rated speed rpm : 850
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.50  TORQUE CONTROL  Rated speed rpm : 850 rack travel mm : 1.80
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 7.90  rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.50  TORQUE CONTROL  Rated speed rpm : 850

Rated speed rpm : 500

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : + 10.0

### LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.97 Test oil : ISO 4113

Combination No. : 0 400 866 224

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C860L

Governer no. : 0 420 232 623

Cust. part No. : 0423 1812 KY

Customer—spec. information Customer : KHD-DMI

Motor : F6L912/913\_NEU

Power KW : 89.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerarice mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance	
cm3/1000s. : 8.0	CONTROL LEVER
]	control lever
Rated speed rpm : 325	position degree : 102.0 tolerance degree : +- 4.0
Rack travel in mm: 8.50	
Tolerance mm : +- 0.10	RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance -	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.5	- Rated speed rpm : 1339
Spreed	Tolerance 1/min : + 15
Tolerance -	
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 9.0	- Rated speed rpm : 1510
1	
(D) OFFITAIO OF THE STATE DUMB	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	- Rated speed rpm : 1360
WITH GOVERNOR	
7	<del>-</del>
1	<del>-</del>
CHARL CLEDIE DOCTTAN	LOUITNE
GUIDE SLEEVE POSITION -	- LOW IDLE
	•
control lever	- control lever
position degree : FREE	- position degree : 69.0
Rated speed rpm : 800	- tolerance degree : +- 4.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	<ul> <li>Setting point w/out bumper spring</li> </ul>
+	- Rated speed rpm : 325
governor spring	- rack travel mm : 8.00
pre-tension -	Tolerance mm : + 0.10
click setting x : 3.00	
orien secting a	· · · · · · · · · · · · · · · · · · ·
	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 325 - rack travel mm : 8.50
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	Rated speed rpm : 325
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure	Rated speed rpm : 325 - rack travel mm : 8.50
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 473
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : -	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 473
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : ÷ 1.0 Check tolerance	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 750

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

on 7/1000 obselve

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. :  $\leftarrow$  10.0

### LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.03.97 Test oil : ISO 4113

Combination No. : 0 400 866 225

Injection pump

Pump designation : PES6A95L410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C861L

Governer no. : 0 420 232 624

Cust. part No. : 0423 1813 KY

Customer-spec. information

Customer : KHD-DMI

Motor : F6L912/913\_NEU

Power KW : 89.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 76.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance : 3.5 Check tolerance	Check tolerance cm3/1000s. : 8.0
cm3/1000s. : 8.0	
	CONTROL LEVER
1	control lever
Rated speed rpm : 325	position degree : 102.0
Book Association on the Spirit	tolerance degree : +- 4.0
Rack travel in mm : 8.50 + Tolerance mm : + 0.10 +	RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance + 2.0 +	Tolerance 1/min : + 5
Check tolerance	rack travel mm : 4.00
cm3/1000s. : + 4.5	Rated speed rpm : 1339
Spreed	Tolerance 1/min : +- 15
Tolerance + cm3/1000 strokes : 5.5 +	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1510
İ	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1360
WITH GOVERNOR	
†	
GUIDE SLEEVE POSITION	LOW IDLE
†	
control lever	control lever
position degree : FREE +	position degree : 69.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50	Setting point w/out bumper spring
Tolerance mm : + 0.20	
<b>†</b>	Rated speed rpm : 325
governor spring + pre-tension +	rack travel mm : 8.00 Tolerance mm : + 0.10
click setting x : 3.00	TO COT GITTOU THAT
+	Testing:
1	resting.
FILL LOAD DELTVERY AT FILL LOAD STOP	-
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 725
Rated speed rpm : 1250	Rated speed rpm : "25
Rated speed rpm : 1250 Aneroid pressure	Rated speed rpm : ™25 rack travel mm : \$.50 Tolerance mm : ← 0.10
Rated speed rpm : 1250 Aneroid pressure hPa : -	Rated speed rpm : 725 rack travel mm : 3.50 Tolerance mm : + 0.10 rack travel mm : 2.00
Rated speed rpm : 1250 Aneroid pressure	Rated speed rpm : ™25 rack travel mm : \$.50 Tolerance mm : ← 0.10
Rated speed rpm : 1250 Aneroid pressure hPs : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	Rated speed rpm : 725 rack travel mm : 3.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 725 rack travel mm : 3.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 725 rack travel mm : 3.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	Rated speed rpm : 725 rack travel mm : 3.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	Rated speed rpm : 725 rack travel mm : 3.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.50
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	Rated speed rpm : 725 rack travel mm : 3.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 473 Tolerance 1/min : + 30  Rated speed rpm : 100

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 500

Start interlock

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance cm3/1000s. : + 10.0

## LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06,03,97 : ISO 4113 Test oil

Combination No. : 0 400 866 231

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...900A1C875L

Governer no. : 0 420 232 630

Cust. part No. : 0423 2058 KY

Customer-spec. information Customer : KHD-DMI : BF6L 913/C Motor Power KW : 112.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : **←** 1.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm Tolerance mm 3.00 : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

tolerance \*NW : **←** 0.75

## BASIC SETTING

850 Rated speed rpm :

Rack travel in mm : 13.80

Del. quantity cm3/1000 strokes : 97.0

Tolerance cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance cm3/1000 strokes : 3.5	
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
1	control lever
	position degree : 89.0
1	tolerance degree : + 4.0
Rated speed rpm : 325	
	RATED SPEED
Rack travel in mm: 8.20	rack travel mm : 12.80
Del. quantity	Rated speed rpm : 895
cm3/1000 strokes : 11.5	Tolerance 1/min : + 5
Tolerance	
cm3/1000 strokes : + 2.0 +	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 920
cm3/1000s. : +- 4.5	Tolerance 1/min : + 10
Spreed	
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : + 0.55
Check tolerance	Rated speed rpm : 1095
cm3/1000s. : 9.0 +	
+	rack travel mm : 4.00
+	Rated speed rpm : 945
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
GUIDE SLEEVE POSITION	LOW IDLE
†	anntant lavor
T	control lever
control lever + position degree : FREE +	position degree : 67.0 tolerance degree : + 4.0
position degree : FREE + Rated speed rpm : 800 +	toterance degree . , 4.0
Nated speed (pii) . Goo	Setting point w/out bumper spring
Rack travel in mm: 0.50	occerning pointe will out bamper opining
Tolerance mm : + 0.20	Rated speed rpm : 325
10001 3.100 11111	rack travel mm : 7.70
governor spring	Tolerance mm : + 0.10
pre-tension +	
click setting x : 2.25	Testing:
	Rated speed rpm : 325
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 8.20
Rated speed rpm : 850	rack travel mm : 2.00
Aneroid pressure	Rated speed rpm : 415
hPa : - +	Tolerance 1/min : + 30
Del. quantity	
cm3/1000 strokes : 97.0	Rated speed rpm : 100
cm3/1000 strokes : + 1.0	CRT mm min. : > 19.50
Check tolerance	5.5.1 (200 m) 1114 4 7 176.50
cm3/1000s. : + 3.0	
Spreed	TORQUE CONTROL
Tolerance	TOTAL POINTINGS
cm3/1000 strokes : 3.5	Rated speed rpm : 850
Chack tolerance	
Check tolerance tm3/1000s. : 8.0	rack travel mm : 13.80

Rated speed rpm : 500

Start interlock

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  7.5

Check tolerance

cm3/1000s. :  $\leftarrow$  10.0

# LOW IDLE

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.03.97 : ISO 4113 Test oil

Combination No. : 0 402 196 712

Injection pump

Pump designation : PES6P110A320RS3386

EP type number : 0 412 016 757

Governor

Governer design. : RE30

Governer no. : 0 421 890 044

Cust. part No. : RE 69563

Customer-spec. information : DEERE Customer Motor : 6068HDW55

: 127.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

40 temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0

600 x length mm :

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 : + 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

Start of delivery blocking

\*NW after s.o.d. : 6.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : +- 0.75

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

15.00 travel : +- 0.50 Tolerance mm Difference \* CS : 2.00

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 VTESTING & SETTING RACK TRAVEL SENSOR **POSITION** Engine speed min-1: Setting point (P, R and H pump) 3.100 Uact V : 13.00 CRT mm Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10 Check value (P, R and H pump) 1.700 Uact V 6.15 CRT mm : +/- 0.25 Tolerance mm Check : +/- 0.30 tolerance mm Setting point (M pump) Uact V 3.100 12.50 CRT mm : +/- 0.05 Tolerance mm Check : +/- 0.10tolerance mm Check value (amua M) 1.700 Uact V 5.50 CRT mm : +/- 0.25 Tolerance mm Check : +/- 0.30tolerance mm Stop position : Value with Uact V deenergised adjusting magnet and control rod in stop position. 0.75 CRT mm : +/- 0.25 Tolerance mm Check

: +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check

tolerance V : +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm 1000 Uact V 3.180 Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : +-Check tolerance cm3/1000s.4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 9.0

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm 600 3.180 Uact V Del. quantity cm3/1000 strokes : 143.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance 12.0 cm3/1000s. Rated speed rpm 400 1.590 Uact V

Del. quantity

cm3/1000 strokes :

16.5

tolerance mm

Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000s. : 10.0

## TEST POINT L1

Rated speed rpm : 400
Uact V : 1.590
Tolerance Volt : + 0.060
Check tolerance
Volt : + 0.060

## STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm3/1000 strokes : 115.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 13.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.02.97 : ISO 4113 Test oil

Combination No. : 9 400 030 720

Injection pump

Pump designation : PES6A95D320/3RS2895

EP type number : 9 410 037 238

Governor

Governer design. : RSV475...1250A0C833R

Governer no. : 9 420 034 703

Cust. part No. : 3928595

Customer-spec. information Customer : CDC : 6BTA Motor Power KW : 130.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.70
Tolerance mm : + 0.05 Check

tolerance mm  $: \leftarrow 0.10$ 

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Tolerance : 0-60-120-180-240

Check

tolerance \*NW : + 0.75

Start of delivery blocking

9.00 \*NW after s.o.d. : Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 12.55 Tolerance mm :  $\leftarrow$  0.05

Del. quantity + cm3/1000 strokes : 106.0 +	Aneroid pressure hPa : 900
CIID/ 1000 321 0KES . 100.0	Del. quantity
Tolerance	cm3/1000 strokes : 106.0
cm3/1000 strokes : +- 1.0 +	Tolerance cm3/1000 strokes : +- 1.0
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 3.0	cm3/1000s. : +- 3.0
+	Spreed
Spreed	Tolerance
Tolerance	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes : 3.5	cm3/1000s. : 6.0
+	
Check tolerance	
cm3/1000s. : 6.0	CONTROL LEVER
· - · · · · · · · · · · · · · · · · · ·	control lever
Rated speed rpm : 475	position degree : 112.0
Rack travel in mm: 5.70	tolerance degree : +- 4.0
Tolerance mm : + 0.10	RATED SPEED
Del. quantity	rack travel mm : 11.50
cm3/1000 strokes : 17.5	Rated speed rpm : 1320
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 + Check tolerance	rack travel mm : 5.50
cm3/1000s. : + 4.5	Rated speed rpm : 1390
Spreed	Tolerance 1/min : + 5
Tolerance	
cm3/1900 strokes : 3.5	rack travel mm : 0.85
Check tolerance + cm3/1000s. : 5.5 +	Tolerance mm : +- 0.55 Rated speed rpm : 1475
cm3/1000s. : 5.5 +	Rated Speed Ppill : 1475
<del>}</del>	rack travel mm : 5.50
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1390
WITH GOVERNOR	
I	
GUIDE SLEEVE POSITION +	LOW IDLE
İ	
control lever	control lever
position degree : - 3	position degree : 85.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50	Control lever difference
Tolerance mm : + 0.20	Grad : 27.0
+	tolerance degree : + 4.0
governor spring	
pre-tension +	Setting point w/out bumper spring
click setting $x : 5.00$	Rated speed rpm : 475
	rack travel mm : 5.20
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
+	· •
Rated speed rpm : 1250 +	Testing:
+	

Rated speed rpm 475 5.70 rack travel mm Tolerance mm : + 0.10

Rated speed rpm 100

: > 19.00 CRT men min.

TORQUE CONTROL

1250 Rated speed rpm : rack travel mm 12.55 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm 500 900 Pressure hPa

Pressure hPa 500 Rated speed rpm rack travel mm 10.70 Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm 500

480 Pressure hPa 12.20 rack travel mm : + 0.20Tolerance mm

350 Pressure hPa 11.70 rack travel mm Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 500 Rated speed rpm Del. quantity

cm3/1000 strokes : 72.5

Tolerance

1.0 cm3/1000 strokes : +-

Check tolerance cm3/1000s.

3.0 : +-

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 20.50 : +- 0.50Tolerance mm

Del. quantity cm3/1000 strokes : 120.5

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : **←** 15.0

LOW IDLE

475 Rated speed rpm Del. quantity cm3/1000 strokes : 17.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance cm3/1000s.

: +-4.5

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance

5.5 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 03.03.97

Test oil

: ISO 4113

Combination No. : 9 400 030 734GA

infection pump

Pump designation : PES4A950320/3RS2880

EP type number : 9 410 037 214

Governor

Governed design. : RSN-475...1100A00847R

Governer no. : 9 420 (34 713

Cust. part No.

. 5933290

Customer-spec. information Customer : CDC

Motor

: 45T3.9

Power KW

: 74.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +-2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal @# @ ery quant.

per values

BEGINNING OF DELIVERY

Test pressure ban : 17.0 Tulerance bar : ← 1.0

Prestroke mm : 2.45

: +- 0.05 Toterance ma

Check

: + 0.10 tolerance mm

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : **←** 0.50

Check

: + 0.75tolerance \*NW

Start of delivery blocking

\*NW after s.o.d. : 7.50

Tolerance : **→** 0.50

Check

: **←** 0.75 tolerance °NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.75 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 109.5	Aneroid pressure hPa : 1000 Del. quantity
Tolerance - 1.0	cm3/1000 strokes : 109.5 Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 3.0	- cm3/1000s. : + 3.0 - Spreed
Spreed	- Tolerance - cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	- Check tolerance - cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	- CONTROL LEVER
	- control lever
Rated speed rpm : 500	position degree : 101.0 tolerance degree : + 4.0
Rack travel in mm: 5.65 - Tolerance mm: - 0.10 -	- RATED SPEED
Del. quantity	rack travel mm : 11.70
cm3/1000 strokes : 20.5	Rated speed rpm : 1165
Tolerance - cm3/1000 strokes : +- 2.0 -	Tolerance 1/min : +- 5
Check tolerance	rack travel mm : 6.00
cm3/1000s. : +- 4.5	Rated speed rpm : 1230
Spreed - Tolerance -	Tolerance 1/min : + 5
cm3/1000 strokes : 6.0	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 8.0	- Rated speed rpm : 1375
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 6.00 Rated speed rpm : 1230
GUIDE SLEEVE POSITION	- LOW IDLE
control lever	- control lever
position degree : -3	- position degree : 81.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50	- Control lever difference
Tolerance mm : + 0.20	- Grad : 20.0
governor spring	- tolerance degree : +- 6.0
pre-tension +	- Setting point w/out bumper spring
click setting x : 5.00	Ported appeal and 500
	- Rated speed rpm : 500 - rack travel mm : 5.15
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
Rated speed rpm : 1100	Testing:

Rated speed rpm	: 500
rack travel mm	5.65
Tolerance mm	: <b>←</b> 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm	: 1100
rack travel mm	: 12.75
Tolerance mm	: <b>←</b> 0.05
Rated speed rpm	: 750
rack travel mm	: 13.70
Tolerance mm	: + 0.10
ANEROID/ALTITUDE	
COMPENSATOR TEST	
SETTING	
Rated speed rpm	: 750
Rated speed rpm Pressure hPa	: 1000
Pressure hPa	
Rated speed rpm	: 750
rack travel mm	: 11.90
Tolerance mm	: + 0.10
MEASUREMENT	
Rated speed rpm	: 750
Pressure hPa	: 440
rack travel mm	: 12.40
Tolerance mm	: +- 0.20
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa	: 1000
Rated speed rpm	: 750
Del. quantity	. 127 E
cm3/1000 strokes Tolerance	: 123.5
cm3/1000 strokes	: <b>←</b> 2.0
Check tolerance	
cm3/1000s.	: +- 4.0
Aneroid pressure	
Aneroid pressure hPa	: -

Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : +	750 96.5 - 1.0 - 3.0
CM3/10005.	: +	- 3.0
STARTING FUEL DEL	IVER'	Y

			400
Rated speed rpm	:		100
rack travel mm	:		20.50
Tolerance mm	:	+-	0.50
Del. quantity			
cm3/1000 strokes	:		122.3
Tolerance			
cm3/1000 strokes	:	+-	10.0
Check tolerance			
cm3/1000s.	:	+-	15.0

LOW IDLE		
Rated speed rpm Del. quantity	:	500
cm3/1000 strokes Tolerance	:	20.5
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s.	: +-	4.5
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	6.0
cm3/1600s.	:	8.0

End of test specification sheet

NO1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.03.97 : ISO 4113 Test oil

Combination No. : 0 402 046 864

Injection pump

Pump designation : PES6P120A320RS3337

EP type number : 0 412 026 772

Governor

Governer design. : RQV300...1250PA1149

: 1K

Governer no. : C 421 815 421

Cust. part No. : CCEP 5142A 66-219

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 06-02-26 W4

Power KW : 155.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temo. °C 40 Tolerance °C

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Tolerance bar : + 26.0

Prestroke num : 4.15 : +- 0.05 Tolerance mm

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 13.00 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : **←** 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

\*NW after s.o.d. : -0.35 : **←** 0.50 Tolerance

Check

: + 0.75 tolerance \*NW

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

travel 13.00 Difference \* CS : 2.00

CRT ZERO POSITION

Rack travel in mm: 13.10 Tolerance mm: + 0.05	Rated speed rpm : 876 guide sleeve travel mm : 6.02
BASIC SETTING	Tolerance mm : + 0.25
Rated speed rpm : 1250	Rated speed rpm : 510 guide sleeve travel mm : 3.59
Del. quantity cm3/1000 strokes : 199.0	Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1600 guide sleeve travel mm : 13.50
Check tolerance cm3/1000s. : + 4.0	Tolerance mm : + 0.50
Spreed	+ GUIDE SLEEVE POSITION
Tolerance cm3/9000 strokes : 5.0	control lever posicion degree : - 1 Rated speed rpm : 1415
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 12.15 Tolerance mm : +- 2.03
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : -8.30 Tolerance mm : + 0.10	Rated speed rpm : 1250 Aneroid pressure
Del. quantity cm3/1000 strokes : 25.0	† hPa : 1000 † Del. quantity
Tolerance cm3/1000 strokes : +- 2.0	+ cm3/1000 strokes : 199.0 + Tolerance
Check tolerance cm3/10COs. : ← 5.0 Spreed	+ cm3/1000 strokes : + 1.0 Check tolerance + cm3/1000s. : + 4.0
Tolerance cm3/1000 strokes : 8.0 Check tolerance	Spreed Tolerance cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	t Check tolerance cm3/1000S. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Ī
WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 296.0
Rated speed rpm : 1328 guide sleeve	tolerance degree : + 4.0
travel mm : 9.98 Tolerance mm : + 0.15	RATED SPEED rack travel mm : -1.00 Rated speed rpm : 1312
Rated speed rpm : 300 guide sleeve	Tolerance 1/min : + 15
travel mm : 1.31 Tolerance mm : +- 0.20	rack travel mm : -9.10 Rated speed rpm : 1440

Tolerance 1/min	: +- 5	+	
		+ Pressure hPa	
rack travel mm	: -12.60	rack travel mm Tolerance mm	: -2.55
Tolerance mm Rated speed rpm	: +- 0.50	+ Tolerance mm	: <b>←</b> 0.10
Rated speed rpm	: 1550	† .	
		+ Pressure hPa	
		† rack travel mm † Tolerance mm	: -1.80
		† Tolerance mm	: <b>←</b> 0.05
LOW IDLE	· · · · · · · · · · · · · · · · · · ·	Stort interless	
FOM INSE		† Start interlock	
		Pated speed rom	• > 175
control lever		Rated speed rpm Rated speed rpm	• • 2/0
position degree	· 245.0	Nacca speed i piii	
tolerance degree		Check	
o co. diloc dog. co		speed 1/min	: > 155
Testing:		+ Check	
		+ speed 1/min	: < 260
Rated speed rpm	: 300	+	
rack travel mm	: -8.30	+	
Tolerance mm	: <b>←</b> 0.10	FUEL DELIVERY CH	ARACTERISTICS
		+	
Rated speed rpm	: 200	+ Aneroid pressure	
		† hPa	: 1000
CRT mm min.	: < −7.50	Rated speed rpm	: 850
		+ Del. quantity	
Rated speed rpm	: 400	+ cm3/1000 strokes	: 141.0
		+ Tolerance	
TODAUG AGNITOAL			
TORQUE CONTROL		+ Check tolerance	
Data dana ad man	. 4250	+ cm3/1000s.	: +- 0.0
Rated speed rpm	: 1250	†	
Parked speed now	• 95n	+ Aneroid pressure + hPa	
Raited speed rpm	: 850 : -1.85	Rated speed rpm	1000
rack travel mm Tolerance mm	: + 0.15	Del. quantity	. 1000
TO CET GITCE THAT	0.15	cm3/1000 strokes	• 127 5
Rated speed rpm	: 350	+ Tolerance	. , , , ,
rack travel mm	: -1.60	+ cm3/1000 strokes	: +- 1.0
Tolerance mm	: +- 0.30	+ Check tolerance	
		- cm3/1000s.	: +- 4.0
ANEROID/ALTITUDE		+	
COMPENSATOR TEST			
		+ STARTING FUEL DE	LIVERY
05777110			400
SETTING		+ Rated speed rpm	: 100
0-4-4	. 1000	+ Del. quantity	402.0
Rated speed rpm Pressure hPa	1000	cm3/1000 strokes	: 102.0
rack travel mm	: 1000	+ Tolerance + cm3/1000 strokes	
rack travet mm	: -1.40	+ Check tolerance	: +- 15.0
Pressure hPa	• -	+ check toterance + cm3/1000s.	· + 10 n
Rated speed rpm	•	- Cili37 10000.	
rack travel mm	-3.40	<del> </del>	
Tolerance mm	· + 0.20	+	
MEASUREMENT		+ LOW IDLE	
		+	
Rated speed rpm	: 1000	+ Rated speed rpm	: 300
N04			

Del. quantity cm3/1000 strokes	:	25.0	
Tolerance cm3/1000 strokes Check tolerance	: +-	2.0	
cm3/1000s.	: +-	5.0	
Tolerance cm3/1000 strokes Check tolerance	:	8.0	
cm3/1000s.	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 12.03.97 Edition Test oil : ISO 4113

Combination No. : 0 402 046 872

Injection pump

Pump designation : PES6P120A320RS3337 EP type number : 0 412 026 770

Governor

Governer design. : RQV300...1250PA1246K

Governer no. : 0 421 815 480

Cust. part No. : CCEP 5155A 66-217

Customer-spec. information

Customer : RENAULT V.I. Motor : MIDR 06-02-26 U4

Power KW : 111.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. "C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 135 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.10 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

rnasing : 0-60-120-180-240 Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

\*NW after s.o.d. : 0.08 : +- 0.50 Tolerance

Check

: +- 0.75 tolerance \*NW

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

travel : 11.00 Difference \* CS : 2.00

·	
CRT ZERO POSITION	ı
Rack travel in mm Tolerance mm	10.70 : + 0.05
BASIC SETTING	
Rated speed rpm	: 1250
Del. quantity cm3/1000 strokes	: 145.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0
Rated speed rpm	: 300
Rack travel in mm Tolerance mm	: -5.80 : +- 0.10
Del. quantity cm3/1000 strokes	: 28.0
Tolerance cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s.	: +- 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
(B) SETTING OF IN	JECTION PUMP
WITH GOVERNOR	
WITH GOVERNOR  GUIDE SLEEVE TRAV	EL
WITH GOVERNOR  GUIDE SLEEVE TRAV	EL

Rated speed rpm guide sleeve	: 300
travel mm Tolerance mm	: 1.31 : + 0.20
Rated speed rpm guide sleeve	: 900
travel mm Tolerance mm	: 6.50 : + 0.25
Rated speed rpm guide sleeve	: 530
travel mm Tolerance mm	: 3.77 : + 0.25
Rated speed rpm guide sleeve	: 1580
travel mm Tolerance mm	: 13.50 : + 0.50
GUIDE SLEEVE POSI	TION
control lever position degree Rated speed rpm	: - 1 : 1400
Rack travel in mm Tolerance mm	: 10.50 : + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 1250 Aneroid pressure
hPa : -
Del. quantity cm3/1000 strokes : 145.0
Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : +- 4.0
Spreed
Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. : 9.0

CONTROL LEVER	
control lever position degree tolerance degree	: 296.0 : + 4.0
RATED SPEED rack travel mm Rated speed rom	: -1.00 : 1305

Tolerance 1/min	: <del></del> 15
rack travel mm	: -6.70
Rated speed rpm	: -6.70 : 1400
Tolerance 1/min	: +- 5
rack travel mm	
Tolerance mm	: <b>←</b> 0.50
Rated speed rpm	: 1550
LOW IDLE	
LOW TOLL	
control lever	
position degree	: 242.0
tolerance degree	: +- 4.0
Testing:	
Rated speed rpm	: 300
rack travel mm	
Tolerance mm	: +- 0.10
	· -
Reted speed rpm	: 200
CRT mm min.	: < -4.80
Rated speed rpm	: 380
TORQUE CONTROL	
TONGOE CONTINUE	
Rated speed rpm	: 1250
Rated speed rpm	: 750
rack travel mm	A 4 m
Tolerance mm	: −1.60 : + 0.10
Rated speed rpm	
rack travel mm	
Tolerance mm	: <b>←</b> 0.15
Start interlock	
Rated speed rpm	: > 130
Rated speed rpm Rated speed rpm	: < 225
Check	
	: > 110
Check	110
speed 1/min	: < 245
•	

Aneroid pressure hPa Rated speed rpm Del. quantity	:	750
cm3/1000 strokes	:	105.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	6.0
STARTING FUEL DEL	IVERY	

STARTING FUEL DEL	TAFKI	
Rated speed rpm Del. quantity	:	100
cm3/1000 strokes Tolerance	:	108.0
cm3/1000 strokes	: +-	15.0
Check tolerance cm3/1000s.	: +-	- 19.0

LOW IDLE		
Rated speed rpm Del. quantity	:	300
cm3/1000 strokes	:	28.0
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	5.0
Spreed Tolerance		0.0
cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.03.97 Edition Test oil : ISO 4113

Combination No. : 0 402 046 877

Injection pump

Pump designation : PES6P120A32GRS3337 EP type number : 0 412 026 772

Governor

Governer design. : RQV300...1250PA1149

: 2K

Governer no. : 0 421 815 504

Cust. part No. : CCEP 5158A 66-218

Customer-spec. information

Customer : RENAULT V.I. Motor : MIDR 06-02-26 V4

Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

: 4.15 : + 0.05 Prestroke mm Tolerance mm Check

tolerance mm : **←** 0.10

Rack travel in mm : 13.00 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240 Tolerance : + 0.30

Check

tolerance 'NN : + 0.50

Start of delivery mark

\*NW after s.o.d. : -0.35

Tolerance :  $\leftarrow$  0.50 Check

tolerance \*NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

travel : 13.00 Difference ° CS : 2.00

CRT ZERO POSITION

Rack travel in mm: 12.30 Tolerance mm: + 0.05	Rated speed rpm : 868 guide sleeve travel mm : 5.97 Tolerance mm : + 0.25
BASIC SETTING	+
Rated speed rpm : 1250	Rated speed rpm : 510 guide sleeve travel mm : 3.59
Del. quantity cm3/1000 strokes : 145.0	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 1600 guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 4.0	
Spreed	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1400
Check tolerance cm3/1000S. : 9.0	Rack travel in mm : 11.60 Tolerance mm : +- 2.00
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: -7.80 Tolerance mm: + 0.10	Rated speed rpm : 1250 Aneroid pressure
Del. quantity cm3/1000 strokes : 28.0 Tolerance	+ hPa : 1000 + Del. quantity + cm3/1000 strokes : 145.0
cm3/1000 strokes : + 2.0 Check tolerance	Tolerance + cm3/1000 strokes : + 1.0
cm3/1000S. : +- 5.0 Spreed	+ Check tolerance + cm3/1000S. : + 4.0
Tolerance cm3/1000 strokes : 8.0	+ Spreed + Tolerance
Check tolerance cm3/1000S. : 12.0	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
(D) OFTING OF THURSTION DUMP	T CM3/ 18003
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 1311 guide sleeve	<pre>position degree : 298.0 tolerance degree : +- 4.0</pre>
travel mm : 9.80	RATED SPEED
Tolerance mm : + 0.15	+ rack travel mm : -1.00 + Rated speed rpm : 1320
Rated speed rpm : 300 guide sleeve	Tolerance 1/min : +- 15
travel mm : 1.31 Tolerance mm : + 0.20	rack travel mm : -8.30 Rated speed rpm : 1440
N10	

Tolerance 1/min	<b>: ←</b> 5
rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.50
LOW IDLE	
control lever position degree tolerance degree	: 242.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 200
CRT mm min.	: < 6.80
Rated speed rpm	: 400
TORQUE CONTROL	
Rated speed rpm	: 1250
Rated speed rpm rack travel mm Tolerance mm	: 850 : −1.40 : ← 0.15
Rated speed rpm rack travel mm Tolerance mm	: 350 : −1.90 : ← 0.30
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rom Pressure hPa	: 1000 : 1000
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 1000 : -2.35 : + 0.20
MEASUREMENT	
Rated speed rpm	: 1000

Pressure hPa rack travel mm Tolerance mm	: 180 : −1.95 : ← 0.10			
Pressure hPa rack travel mm Tolerance mm	: 240 : −1.50 : ← 0.05			
Start interlock				
Rated speed rpm Rated speed rpm	: > 175 : < 240			
Check speed 1/min Check	: > 155			
speed 1/min	: < 260			
FUEL DELIVERY CHA	RACTERISTICS			
Aneroid pressure hPa Rated speed rpm	: 1000 : 850			
Del. quantity cm3/1909 strckes	: 124.0			
Tolerance cm3/1000 strokes	: <b>←</b> 3.0			
Check tolerance cm3/1000s.	: +- 6.0			
Aneroid pressure hPa Rated speed rpm Del. quantity				
cm3/1000 strokes Tolerance	:			
cm3/1000 strokes Check tolerance				
cm3/1000s.	: +- 4.0			
STARTING FUEL DELIVERY				
Rated speed rpm	: 100			
Del. quantity cm3/1000 strokes	: 101.0			
Tolerance cm3/1000 strokes	: + 15.0			
Check tolerance cm3/1000s.	: + 19.0			
LOW IDLE				
Rated speed rpm	: 300			

Del. quantity cm3/1000 strokes	:	28.0
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000S. Spreed	; <b>+</b> -	5.0
Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.03.97 Test oil : ISO 4113

Combination No. : 0 402 074 7008

Injection pump

Pump designation : PES4P110B720RS3383

EP type number : 0 412 014 701

Governor

Governer design. : RSV300...1100P1A667

Governer no. : 0 421 833 582

Cust. part No. : 9279831

Customer-spec. information
Customer : LIEBHERR
Motor : D 924 TI-E A2

Power KW : 147.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp.  $^{\circ}$ C :

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 207.0 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.20 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : G-90-180-270

Tolerance : + 0.30

Check

tolerance \*NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 189.0

Tolerance

cm3/1000 strokes : + 1.0

N13

	1	Tolopenes
Check tolerance cm3/1000s.	: + 3.5	Tolerance cm3/1000 strokes : 4.0 Check tolerance
Spreed	<u> </u>	cm3/1000s. : 7.5
Tolerance	Ī	
cm3/1000 strokes	: 4.0	CONTROL LEVER
Check tolerance cm3/1000S.	: 7.5	control lever position degree : 106.0 tolerance degree : +- 4.0
		toterance degree . • 4.0
Rated speed rpm	: 400	RATED SPEED rack travel mm : 12.00 Rated speed rpm : 1040
Rack travel in mm	: 4.00	Tolerance 1/min : +- 5
Tolerance mm Del. quantity	: + 0.10	Tolerance mm : + 0.55
cm3/1000 strokes	: 20.0	
Tolerance cm3/1000 strokes	: <b>←</b> 3.0 <b>+</b>	rack travel mm : 4.90 Rated speed rpm : 1095
Check tolerance	: ← 5.5 +	
cm3/1000S. Spreed	, +- 3.3	
Tolerance	+	
cm3/1000 strokes Check tolerance	: 4.5	LOW IDLE
cm3/1000S.	: 7.5	
	+	control lever
(D) CETTING CE TH	FORTICIAL DE IMID	position degree : 78.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PURP	tolerance degree : 4.0
	1	Setting point w/out bumper spring
		Rated speed rpm : 400
GUIDE SLEEVE POSIT	LI'ON;	rack travel mm : 3.80 Tolerance mm : +- 0.10
control lever	<u> </u>	Testing:
position degree	: - 3	_
governor spring	+	Rated speed rpm : 400 rack travel mm : 4.00
pre-tension	Ţ	rack travel mm : 4.00 Tolerance mm : + 0.10
click setting x	: 4.00	
		TORQUE CONTROL
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	
Datad anada ana	. 1000	Rated speed rpm : 1000
Aneroid pressure	+	Tolerance mm : +- 0.05
hPa	: 1420	
	. 189.0	Rated speed rpm : 500
Tolerance	1	Tolerance mm : + 0.10
cm3/1000 strokes	•	
	: + 1.0	
Check tolerance cm3/1000S.	+	Rated speed rpm : 700 rack travel mm : 13.00
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1420	rack travel mm : 13.00 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 13.00 Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rom 550 Pressure hPa 1420 13.00 rack travel mm : + 0.10Tolerance mm

Pressure hPa 550 Rated speed rpm rack travel mm : 11.20 Tolerance mm : + 0.10

### **MEASUREMENT**

Rated speed rpm 550

Pressure hPa 910 : 12.70 rack travel mm Tolerance mm : +- 0.05

780 Pressure hPa rack travel mm 11.60 Tolerance mm : + 0.10

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1420 hPa Rated speed rpm 500 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +- 3.0

214.0

Check tolerance

cm3/1000s.: +- 6.0

Aneroid pressure

1420 Rated speed rpm 700

Del. quantity

cm3/1000 strokes : 205.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance

cm3/1000s. 3.5 : +-

## STARTING FUEL DELIVERY

Rated speed rpm 100 20.50 rack travel mm : + 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 155.0 Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

## LOW IDLE

Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 20.0 Tolerance cm2/1000 strokes : -3.0 Check tolerance cm3/1000s. : +-5.5 Spreed Tolerance

cm3/1000 strokes : 4.5 Check tolerance

7.5

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.03.97 : ISO 4113 Test oil

Combination No. : 0 402 076 748L

Injection pump

Pump designation : PES6P110A720RS3305 EP type number : 0 412 016 742

Governor

Governer design. : RSV300...1100P1A555

Governer no. : 0 421 833 379

Cust. part No. : 9271056

Customer-spec. information Customer : LIEBHERR

: D 926 TI-E A2 Motor

: 210.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 130 Tolerance L/h : +- 10.0

Test nozzle holde assembly : 1 688 901 101

Opening pressure

bar : 207.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

2.0 x inside diameter :

x length mm : 600

#### REMARKS

# (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.20
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing Tolerance : 0-60-120-180-240 : + 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 186.0

Tolerance cm3/1000 strokes : +- 1.0	Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s. : +- 3.5	
Spreed	+ CONTROL LEVER
Tolerance cm3/1000 strokes : 4.0	control lever position degree : 103.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 7.5	RATED SPEED  rack travel mm : 12.00  Rated speed rpm : 940  Tolerance 1/min : + 5
Rated speed rpm : 450	rack travel mm : 4.00 Rated speed rpm : 1000
Rack travel in mm: 5.00	+
Tolerance mm : + 0.10	rack travel mm : 4.00
Del. quantity cm3/1000 strokes : 30.0	Rated speed rpm : 1025
Tolarance	+
cm3/1000 strokes : + 3.0	+
Check tolerance cm3/1000s. : +- 5.5	1011 701 5
Spreed : - 5.5	LOW IDLE
Tolerance	1
cm3/1000 strokes : 4.5	control lever
Check tolerance	+ position degree : 80.0
cm3/1000s. : 7.5	tolerance degree : +- 4.0
	Setting point w/out bumper spring
(8) SETTING OF INJECTION PUMP	+ control of the cont
WITH GOVERNOR	+ Rated speed rpm : 450
	+ rack travel mm : 3.30 + Tolerance mm : + 0.10
	- I totel alice man
GUIDE SLEEVE POSITION	Testing:
	Rated speed rpm : 450
control lever	rack travel mm : 5.00
position degree : - 3	→ Tolerance mm : ← 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	TORQUE CONTROL
FULL EDAD DELIVERY AT FULL EDAD STOP	TORQUE CONTROL
Rated speed rpm : 900	Rated speed rpm : 900
Aneroid pressure	rack travel mm : 13.00
hPa : 1120 Del. quantity	† Tolerance mm : ← 0.05
cm3/1000 strokes : 186.0	Rated speed rpm : 500
Tolerance	+ rack travel mm : 13.00
cm3/1000 strokes : + 1.0	↑ Tolerance mm : ← 0.10
Check tolerance cm3/1000s. : +- 3.5	+ Rated speed rpm : 700
Spreed	rack travel mm : 13.00
Tolerance	Tolerance mm : +- 0.10
cm3/1000 strokes : 4.0	†
	†

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

500 Rated speed rom 1120 Pressure hPa rack travel mm 13.00 : : + 0.10Tolerance mm

Pressure hPa 500 Rated speed rpm rack travel mm 11.20 Tolerance mm : + 0.10

## **MEASUREMENT**

500 Rated speed rom

003 Pressure hPa 12.70 rack travel mm : **←** 0.05 Tolerance mm

Pressure hPa 675 11.80 rack travel im: : + 0.10 Tolerance mm

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1120 hPa 500 Rated speed rpm Del. quantity

cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes : +-2.0 Check tolerance

cm3/1000s. 5.0

Aneroid pressure

hPa 550 Rated speed rpm

Del. quantity

165.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.5

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 20.50 : +- 0.50Tolerance mm Del. quantity cm3/1000 strokes : 155.0 Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s.: +- 14.0

## LOW IDLE

Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 30.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 5.5 : +-

Spreed Tolerance

cm3/1000 strokes : 4.5

Check tolerance

cm3/1000s.7.5

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 10.03.97 Edition Test oil : ISO 4113

Combination No. : 0 402 076 776A

Injection pump

Pump designation : PES6P110A720RS3305

EP type number : 0 412 016 750

Governor

Governer design. : RSV300...1100P1A598

Governer no. : 0 421 833 473

Cust. part No. : 9278136

Customer-spec. information Customer : LIEBHERR : D 926 TI Motor Power KW : 172.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C : <del>+-</del> 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : : **←** 0.1 Tolerance bar

Overflow quantity

min. L/h : 160 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

207.0 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

3.20 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : ← 0.30

Check

tolerance \*NW : ← 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

900 Rated speed rpm :

Rack travel in mm : 10.30 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 156.0

Tolerance cm3/1000 strokes : +- 1.0	+ Spreed + Tolerance + cm3/1000 strokes : 4.0
Check tolerance cm3/1000s. : +- 3.5	Check tolerance cm3/1000s. : 7.5
Spreed	+
Tolerance cm3/1000 strokes : 4.0	CONTROL LEVER  control lever
Check tolerance cm3/1000s. : 7.5	position degree : 97.0 tolerance degree : +- 4.0
Roted speed rpm : 400	RATED SPEED  rack travel mm : 9.30  Rated speed rpm : 940  Tolerance 1/min : + 5
Rack travel in mm : 4.80 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 13.0	rack travel mm : 4.00 Rated speed rpm : 975 Tolerance 1/min : + 15
Tolerance cm3/1000 strokes : \( \to \) 3.0 Check tolerance cm3/1000S. : \( \to \) 5.5 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 985
cm3/1000 strokes : 4.5 Check tolerance cm3/1000s. : 7.5	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 72.0 tolerance degree : + 4.0
	Setting point w/out bumper spring
GUIDE SLEEVE POSITION	Rated speed rpm : 400 rack travel mm : 4.30 Tolerance mm : + 0.10
control lever position degree : - 3	Testing:
governor spring pre-tension click setting x : 4.00	Rated speed rpm : 400 rack travel mm : 4.80 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	TORQUE CONTROL
Rated speed rpm : 900 Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 900 rack travel mm : 10.30 Tolerance mm : + 0.05
cm3/1000 strokes : 156.0 Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 500 rack travel mm : 10.30 Tolerance mm : + 0.10
Check tolerance cm3/1000s. : +- 3.5	+ Rated speed rpm : 700

N20

rack travel mm : 10.30 : **←** 0.10 Tolerance mm

Start interlock

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 154.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s.: + 6.0

Aneroid pressure

hPa Rated speed rpm : 700

Del. quantity cm3/1000 strokes : 156.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : + 19.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 20.50

## LOW IDLE

Rated speed rpm : 400

Del. quantity cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

: +-5.5 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 4.5

Check tolerance

7.5 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 10.03.97 Test oil : ISO 4113

Combination No. : 0 402 646 785

Injection pump

Pump designation : PE6P12OA32OLS7869 EP type number : 0 412 626 887

Governor

Governer design. : RQV300...1050PA1078K

Governer no. : 0 421 815 359

Cust. part No. : 9275445

Customer—spec. information Customer : LIE3HERR Motor : D 9406 TI

Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 165 Tolerance L/h : ← 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-6-3-5-2-

: 4

Phasing : 0-60-120-180-240

Tolerance :  $\leftarrow$  0.30

Check

tolerance \*NW : +- 0.50

BASIC SETTING

Rated speed rpm : 1050

ack travel in mm · 1230

Rack travel in mm : 12.30 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 291.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 4.0

	T guide steeve
Spreed	travel mm : 3.66
	+ Tolerance mm : +- 0.25
Tolerance	<del>1</del>
cm3/1000 strokes : 5.0	Rated speed rpm : 1320
tigo rood ser ones .	- guide sleeve
Al al all and a second	
Check tolerance	+ travel mm : 13.50
cm3/1000s. : 9.0	→ Tolerance mm : ← 0.50
	1
	TOURS OF EDUE DOCTATION
	GUIDE SLEEVE POSITION
Rated speed rpm : 300	†
	+
Rack travel in mm : 4.80	→ control lever
Tolerance mm : + 0.10	position degree : - 1
	T position degree . 1
Del. quantity	Rated speed rpm : 1185
cm3/1600 strokes : 25.0	Ť
Tolerance	+ Rack travel in mm: 10.80
cm3/1000 strokes : +- 3.0	+ Tolerance mm : + 1.30
Check tolerance	1
	T
cm3/1000s. : +- 6.0	
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	<del>}</del>
cm3/1000 strokes : 6.0	+ Rated speed rpm : 1050
Check tolerance	+ Aneroid pressure
cm3/1 <b>00</b> 0s. : 10.0	hPa : 1550
	+ Del. quantity
	+ cm3/1000 strokes : 291.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : + 1.0
WITH GOVERNOR	
	+ Check tolerance
	+ cm3/1000s. : + 4.0
GUIDE SLEEVE TRAVEL	→ Spreed
	+ Tolerance
Rated speed rpm : 1117	+ cm3/1000 strokes : 5.0
guide steeve	+ Check tolerance
travel mm : 10.38	+ cm3/1000s. : 9.0
Tolerance mm : +- 0.25	+
	1
Rated speed rpm : 300	
·	CONTROL LEVER
guide sleeve	T CONTROL LEVER
travel mm : 1.69	†
Tolerance mm : +- 0.25	+ control lever
	position degree : 120.0
Rated speed rpm : 746	+ tolerance degree : +- 4.0
	toget allow dog.
guide sleeve	T DATED CREED
travel mm : 6.20	+ RATED SPEED
Tolerance mm : + 0.25	† rack travel mm : 11.30
	+ Rated speed rpm : 1110
Rated speed rpm : 353	+ Tolerance 1/min : +- 5
	T roter and c minn
guide sleeve	†
travel mm : 2.45	+ rack travel mm : 4.00
Tolerance mm : +- 0.25	+ Rated speed rpm : 1190
	+ Tolerance 1/min : + 15
Rated speed rpm : 403	1
	Dated smood som + 1220
guide sleeve	Rated speed rpm : 1220
travel mm : 3.18	†
Tolerance mm : + 0.25	+
	<del> </del>
Rated speed rpm : 450	1
vater speen this . And	Т

guide sleeve

LOW IDLE	
control lever position degree tolerance degree	: 75.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 4.80 : + 0.10
Rated speed rpm	: 200
CRT mm min.	: > 8.00
Rated speed rpm	: 400
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.30 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.20 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 300 : 11.80 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.00 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 10.25 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1050 : 1550 : 12.30 : + 0.05
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 1050 : 9.30 : + 0.10

Rated speed rpm	: 1050
Pressure hPa rack travél mm Tolerance mm	: 670 : 11.00 : ← 0.05
Pressure hPa rack travel mm Tolerance mm	: 600 : 9.80 : ← 0.70
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa	: 1550
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance cm3/1000 strokes	
Check tolerance	: +- 6.0
Aneroid pressure	
hPa Rated speed rpm	: 1550 : 800
Del. quantity cm3/1000 strokes Tolerance	: 301.0
cm3/1000 strokes Check tolerance	: <b>←</b> 3.0
cm3/1000s.	: + 6.0
Aneroid pressure hPa	:
Rated speed rpm Del. quantity	: 550 : 245.0
cm3/1000 strokes Tolerance cm3/1000 strokes	
Check tolerance cm3/1000s.	: +- 4.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0

Rated speed rpm : 100 rack travel mm : 9.90

MEASUREMENT

Tolerance mm	: +-	0.30
Del. quantity cm3/1000 strokes	:	185.0
Tolerance cm3/1000 strokes	: +-	10.0
Check tolerance		
cm3/1000s.	: +-	14.0

# LOW IDLE

Rated speed rpm	: 300
Del. quantity cm3/1000 strokes	: 25.0
Tolerance cm3/1000 strokes	: + 3.0
Check tolerance cm3/1000s.	: +- 6.0
Spreed Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 10.0